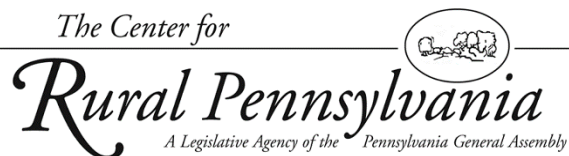


Economic Implications of Pennsylvania's Foreign-Born Population

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Executive Summary

Individuals born outside of the United States represent a significant and growing share of the U.S. population. This is also true of Pennsylvania, in general, and in rural Pennsylvania, in particular. Immigrants and their children are driving increases in racial and ethnic diversity in Pennsylvania, and the degree to which they can integrate socially and economically will have a range of social, economic, and political implications across the Commonwealth. Foreign-born Pennsylvanians represent an important and growing set of workers, business owners, taxpayers, and voters.

This research analyzed records from the U.S. Census Bureau and Bureau of Labor Statistics to develop a descriptive profile of the socioeconomic characteristics of the foreign-born workforce in rural Pennsylvania, draw comparisons with the native-born and urban Pennsylvania workforce, and identify trends in these population characteristics that have occurred since the 2000 Census. Specifically, this research produced estimates of the foreign-born share of rural Pennsylvania's workforce (defined as individuals aged 16-64 years) overall and across different regions within the Commonwealth, described their social and economic characteristics, identified their levels and sources of income, and tracked changes in these outcomes over time.

The analyses yielded a number of important empirical findings:

- In 2016, 3.5 percent of rural Pennsylvania's workforce was foreign-born, and this share represents a 1.5 percentage-point increase over 2000 (2%). The foreign-born represent a smaller share of the rural workforce than in urban areas, where 10.7 percent of the workforce is foreign-born.
- The representation of foreign-born individuals in the workforce is spatially uneven across Pennsylvania. In only three of the 23 rural Public Use Microdata Areas (PUMAs)—

which are sub-state geographic units containing 100,000 or more people—did the foreign-born share of the workforce exceed 6 percent in 2016, and in only three others did the foreign-born share of the workforce fall between 4 and 6 percent.

- The rural foreign-born workforce is diverse with respect to social and economic characteristics. Foreign-born members of the rural workforce are split with respect to educational attainment. More than 30 percent have a bachelor's degree or higher level of education, and more than eight in 10 members of the rural foreign-born workforce speak English well or very well, or speak only English. However, 20 percent of the rural foreign-born workforce did not complete high school, and a disproportionate share—more than one in five—live in families with incomes below poverty.
- Shifts in the socioeconomic profile of the rural foreign-born workforce since 2000 suggest growing disadvantages and challenges to socioeconomic integration, with declining levels of educational attainment and English language skills and increasing rates of poverty.
- Foreign-born workers are distributed unevenly across industries. Among foreign-born workers in rural Pennsylvania, more than 20 percent are employed in professional and related services, and more than 10 percent are employed in retail trade and manufacturing.
- Rural foreign-born workers were more likely to have jobs in the personal services, transportation, and agriculture, forestry and fisheries industries than native-born workers.
- The results of this analysis of income sources suggest broad similarities between foreign- and native-born Pennsylvanians living in rural and urban places. What differences do emerge are complex and do not align neatly with any particular narrative of U.S.

immigration, whether positive or negative.

The empirical results point to a number of potential focus areas for policymakers. These include renewed efforts to improve and make accessible English language training and adult learning/training opportunities, as well as attention to programs that will reduce poverty. The diverse socioeconomic circumstances among the rural foreign-born also underscore the challenges to developing widely-applicable policies related to the immigrant population. Instead, these findings suggest the need for data-driven and targeted interventions aimed at improving the chances for economic mobility among the most at-risk immigrant populations in rural Pennsylvania.

Table of Contents

Introduction	6
Goals and Objectives	10
Methodology	12
Data	12
Measures	14
Analytic Strategy	17
Engagement with Stakeholders	19
Results	20
Foreign-Born Share of Rural Pennsylvania’s Workforce	20
Socioeconomic Profile of the Rural Foreign-Born Population	23
The Foreign-Born Workforce Across and Within Industries	29
Profile of Personal Income Among Members of the Foreign-Born Workforce	33
Changes in the Economic and Demographic Profile of the Foreign-Born Workforce	42
Conclusions	55
Lessons and Implications for National-Level Research	59
Policy Considerations	61
Stakeholder Engagement	65
References	69
Appendix	74

Introduction

Individuals born outside of the United States represent a significant and growing share of Pennsylvania's population. According to data from the U.S. Census Bureau, the foreign-born share of the state's population was 6.3 percent in 2015, which was more than double the share in 1990 (3.1 percent, U.S. Census Bureau 2003, 2015). Immigrants and their children are driving increases in racial and ethnic diversity in Pennsylvania, and the degree to which they can integrate socially and economically will have implications across a number of key domains. Foreign-born Pennsylvanians represent an important and growing bloc of workers, business owners, taxpayers, and voters.

While these overall trends are well-documented, much less is known about the foreign-born population in rural areas of Pennsylvania, and how working-age adults from this population are faring. This knowledge gap is not specific to the Commonwealth. Existing knowledge about the economic impacts of the foreign-born workforce comes largely from either state- and national-level analyses (e.g., Borjas and Freeman, 1992; Duncan and Trejo, 2015; Waters and Jimenez, 2005) or community case studies (e.g., Broadway, 2007; Carr, Lichter, and Kefalas, 2012). As a result, scholars and policymakers currently have limited information about whether foreign-born populations vary systematically between rural and urban areas, and among specific regions, within states. Such information is necessary to develop state and local policies that account for the diversity of contexts in which immigrants settle. By addressing this gap, this research will contribute to the development of policies pertaining to immigration, economic development, and related issues in the Commonwealth.

The following analysis of the economic and demographic characteristics of Pennsylvania's foreign-born workforce is guided by existing academic and applied literature on

the socioeconomic implication of immigration, as well as recent public debates about immigration policy. At least four main observations from this extensive literature motivate this study of the foreign-born population in rural Pennsylvania. First, at the national level, immigrants are diverse in terms of place of origin, skills, and other important socioeconomic and demographic characteristics. However, diversity at the national level does not always translate to the local level since sub-populations of the foreign-born (e.g., by country of origin) are often spatially clustered (South, Crowder, and Chavez, 2005). Analyses at the state and sub-state levels are needed to determine the characteristics of the foreign-born population in particular areas and localities (e.g., in rural Pennsylvania).

Second, the foreign-born workforce is distributed unevenly across industries relative to native-born workers (Pew Charitable Trusts, 2015). However, the degree of over- and under-representation of foreign-born workers in some industries is likely to vary across the country, and analyses at the sub-state level are needed to better understand the position of foreign-born workers within local labor markets. Third, in addition to immigrants' impact on labor markets, there has been significant debate about the potential fiscal impacts of foreign-born residents (e.g., tax payments, social services receipt) (Borjas, 2000). These impacts are also likely to vary between and within states given differences in taxation, program eligibility criteria, and the overall climate for foreign-born individuals, which has been shown to affect safety net utilization (Heinrich, 2018; Watson, 2014). These observations suggest the need for sub-state and local analysis of foreign-born populations' earnings, transfer receipts, tax payments, and related outcomes.

Fourth and finally, since the Hart-Celler Act of 1965—which abolished immigration quotas favoring European countries of origin—the composition of the foreign-born population in

the United States has changed significantly. Whereas European immigrants comprised the majority of pre-1965 immigrants to the U.S., individuals from low- and middle-income countries¹ in Latin America and Asia have constituted a growing and now-majority share of immigrants over subsequent decades (Iceland, 2014). The post-1965 legal framework has remained largely intact in the decades since the act, but concerns about immigration and immigrant incorporation have sparked increased political debate in recent years. Updated analyses of the socioeconomic circumstances of the foreign-born population are needed to ground these discussions in empirical data, and thereby support data, rather than ideology-driven reforms of the immigration system and other policies affecting the foreign-born population.

Motivated by these and related issues, the current study describes the economic conditions among the foreign-born population in rural Pennsylvania, and draws comparisons with urban areas and across different regions of the Commonwealth. A central focus on rural areas is merited for at least three reasons. First, economic conditions are fundamentally different in rural communities than urbanized metropolitan areas. Rural economies tend to be dependent on different industries than their urban counterparts, and are generally smaller, less diversified, and less prosperous (Slack, 2014). The unique structure of rural economies may influence the particular foreign-born populations that move to rural places and have implications for the economic opportunities and outcomes among these residents (Jensen, 2006; Kandel and Parrado, 2005; Lichter, 2012).

Second, rural populations are relatively small, and, on average, have historically been less diverse in terms of race, ethnicity, and nativity (i.e., country of birth) than urban centers.

¹ The term “low- and middle-income countries” is used to refer to countries with relatively low per capita incomes, sometimes referred to as “developing countries.” While there is no single definition of this category, one commonly used income-based country classification system is described by the World Bank in the following online document: <https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries>.

However, in recent years, the native-born, non-Hispanic white population has declined in many rural areas (Johnson, 2011), while new patterns of immigration have increased rates of foreign-born immigration into many rural communities (Hall, 2013; Jensen, 2006). Given the small baseline populations of rural communities, even limited increases in the absolute number of foreign-born residents can have large proportional impacts on the composition of rural populations (Johnson, 2012). As such, these demographic changes are often highly visible and have prompted a range of sentiments among native-born residents and their elected officials (Carr, Lichter, and Kefalas, 2012; Lichter, 2012).

Third, and relatedly, many rural areas across the country, and in Pennsylvania in particular, are characterized by challenging and (often worsening) demographic and economic conditions. These challenges include high rates of poverty and unemployment (Thiede, Kim, and Valasik, 2017), declining or stagnating population size (Johnson, 2011; Johnson and Lichter, 2019), and a range of second-order issues stemming from these conditions—including poor population health, fiscal distress, and the inability to attract and retain businesses and high-skilled individuals (Carr and Kefalas, 2009; Kelsey, 1993; Thiede et al., 2017). The role of foreign-born populations in such places is disputed—viewed by some as a problem and others as a solution to rural decline (Carr, Lichter, and Kefalas, 2012). These analyses aim to inform these debates by providing an empirical benchmark of the foreign-born population’s characteristics, earnings, and contribution to economic activity in rural Pennsylvania.

In short, the changing size and composition of the foreign-born population is reshaping the U.S. population, but these changes are manifesting differently across the country. There have been few systematic analyses of the economic contributions of foreign-born populations within particular states, and this is true of Pennsylvania. New evidence about the foreign-born

population in rural Pennsylvania is merited given this knowledge gap, the growing foreign-born share of the state's population, and the unique characteristics of rural economies and populations. Analyses that account for variation in conditions and contexts across Pennsylvania can inform the development of policies that appropriately account for diversity in conditions across the Commonwealth.

Goals and Objectives

The overall aim of this project was to evaluate the role of foreign-born residents in rural Pennsylvania's economy. Four specific objectives are addressed in this report:

Objective #1: Produce up-to-date estimates of the foreign-born share of the workforce in rural Pennsylvania. This study reports estimates of the share of the workforce in Pennsylvania—overall, and in rural and urban areas separately—that is foreign-born. Here, the workforce is defined to include all individuals aged 16 to 64 years and who are in the labor force or potentially in the labor force. This research also produces and maps estimates of the foreign-born share of the workforce in individual rural and urban localities in Pennsylvania, as measured at the level of Public Use Microdata Areas (PUMAs. See Methodology).

Objective #2: Develop a statistical profile of the demographic and economic characteristics of rural Pennsylvania's foreign-born workforce. This study produces estimates of: (a) the percentages of the foreign-born workforce that are employed, unemployed, and out of the labor force; (b) the distribution of foreign-born workers by their industry and occupation of employment; (c) the share of all workers in each industrial and occupational category that is foreign-born; (d) the rate of business ownership among foreign-born adults; and (e) the socioeconomic and demographic characteristics of the foreign-born workforce. The

socioeconomic and demographic characteristics of interest include: age, sex, marital status, family size, educational attainment, poverty status, race and ethnicity, years of residence in the United States, English language skills, citizenship status, and duration of residence in Pennsylvania.

In addition, this research also accounts for the economic status and potential fiscal impact of this population by developing (f) a profile of personal income among members of the foreign-born workforce. Specifically, this includes estimated average levels of income from wages and salaries, business income, public transfer/safety net programs, and other sources. For reference, this study develops comparable statistical profiles encompassing all of the abovementioned characteristics for the foreign-born urban population and the native-born populations in both rural and urban areas.

Objective #3: Analyze recent changes in the economic and demographic characteristics of rural Pennsylvania's foreign-born population. This research analyzes changes in the demographic and economic characteristics described in objectives one and two since 2000, and documents and describes salient trends. Additionally, it estimates and compares trends between rural and urban areas, and among different localities as measured at the PUMA level (see Methodology).

Objective #4: Synthesize the empirical findings, identify public policy implications, and develop evidence-based policy recommendations. This study integrates the empirical findings and identifies issues and challenges for policymakers to prioritize and address.

Methodology

The methodology describes the U.S. Census Bureau data used in the analyses, defines key terms and measures, and, finally, details the analytic strategy.

Data

This study primarily analyzed data from the American Community Survey (ACS). For selected analyses, it also used data from the U.S. Decennial Census and Current Population Survey (CPS). The main analyses used microdata (i.e., individual-level records) from the ACS, which is an ongoing, nationally-representative survey that replaced the long form of the Decennial Census after 2000. The ACS collects detailed information on individual and household social, economic, and demographic characteristics. Every year, the ACS surveys a sample of the country's population, providing a representative snapshot of the U.S. population. Households that have been randomly sampled receive a questionnaire by mail; participation is obligatory. The ACS asks three questions regarding place of birth, citizenship, and year of entry into the U.S., with the intention of providing a database that includes citizens, non-citizens, and foreign-born individuals.

The U.S. Census Bureau releases 1-year, and pooled, 5-year ACS samples, the latter of which facilitate the production of reliable estimates for areas with relatively small populations (i.e., those with fewer than 65,000 people). Although this study focused on rural areas with low population densities, it nonetheless analyzed the 1-year samples. This is appropriate since the sample is disaggregated to no lower than the Public Use Microdata Areas (PUMA) level. PUMAs are geographic areas defined by the U.S. Census Bureau for use with publicly available microdata. Since each unit contains a population of at least 100,000 persons, reliable estimates

for these strata can be calculated using the 1-year ACS sample. Furthermore, use of the 1-year sample also simplifies the analysis of trends over time.

Data from the 2016 ACS are used to estimate current conditions and the 2010 1-year sample is used for the analyses of trends over time. The trend analysis also draws on data from the 5 percent sample of the 2000 Decennial Census, which includes detailed demographic and economic information comparable to the ACS. After restrictions (described below), the analytic samples respectively include 79,646; 80,245; and 388,363 individuals. This study does not analyze pre-2000 conditions since consistent PUMA boundaries are not available prior to that date (see Measures below), which precludes comparable definitions of rural and urban areas in Pennsylvania.

For select analyses described below, this study also draws on data from the Annual Social and Economic Supplement of the CPS (commonly referred to as the March CPS). The CPS is based on a nationally-representative sample of approximately 60,000 households and is the primary source of labor force statistics in the U.S. This survey is a joint effort between the U.S. Census Bureau and the U.S. Bureau of Labor Statistics. The primary focus of the CPS is to provide data on the U.S. economy and labor force, including estimates of unemployment and income (U.S. Department of Labor Statistics and U.S. Department of Commerce 2006). Similar to the ACS, the CPS is designed to be nationally representative. The CPS questionnaire is computerized, but is administered monthly by Census Bureau field representatives via telephone and in-person interviews. Participation in the CPS is voluntary; all individuals contacted regarding the CPS reserve the right to not answer any questions they feel are too personal and may ask to stop the interview at any point.

The CPS has some advantages (e.g., more detailed income categories) over the ACS and Decennial Census. However, these data can only be stratified by state and metropolitan status and estimates at the sub-state level cannot be reliably produced with a single sample due to small sample size. To address this issue, data from the 2013-2017 CPS samples were pooled for these analyses, which produced a sample size (unweighted) of 16,662.² Nonetheless, this research recognizes the limitations associated with the sub-state analyses of these data and accordingly reports them as supplementary rather than primary analyses.

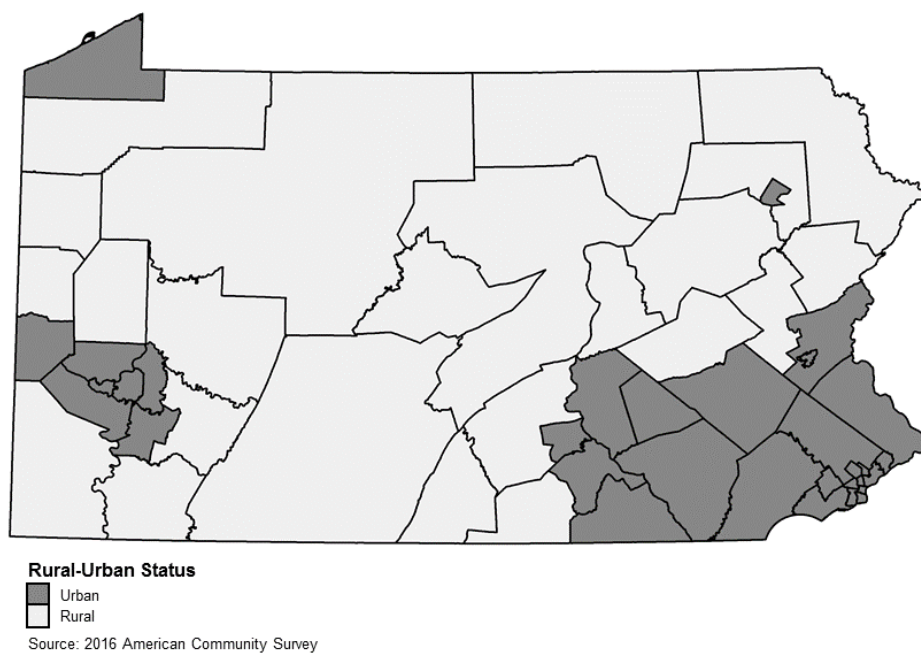
Measures

The distinction between rural and urban areas of Pennsylvania is central to this analysis. However, definitions of rural and urban are complex and contested among academics, analysts, and policymakers (Isserman, 2005). In the main analyses—those using data from the ACS and Decennial Census—this study adapts the Center for Rural Pennsylvania’s definitions and identifies rural residents according to the characteristics of their PUMA of residence. According to this definition, rural residents are individuals who live in a PUMA with a population density below the statewide mean and urban residents are individuals living in PUMAs with population densities at or above the statewide mean. Rural and urban PUMAs are defined throughout the analysis according to the population figures for the year the data were collected (e.g., 2016, 2010, 2000). Importantly for the trend analysis, this study uses a set of consistent PUMA boundaries produced by the Integrated Public Use Microdata Series (IPUMS) project (Ruggles et al., 2015). These boundaries are fixed from 2000 through the most recent ACS, and therefore

² The CPS is collected using a complex sampling strategy in which households are interviewed more than once across a 16-month period. To avoid multiple observations of the same household across samples, this research used the entire 2014 sample, and added in the outgoing rotation group from 2013 and the incoming rotation groups of 2015 and 2016.

allow us to consider a consistent universe of PUMAs throughout the analyses (see Appendix for comparison of consistent and non-consistent boundaries for 2016). The rural-urban status of these PUMAs in 2016, so defined, is illustrated in Figure 1. The rural-urban status of PUMAs for the earlier years in the trend analysis—2000 and 2010—are included in the Appendix.

Figure 1. Rural (Urban) Status of Pennsylvania PUMAs, 2016



The CPS data do not include PUMA identifiers, so the PUMA-based definitions described above cannot be used for the select analyses that use the CPS. Instead, the analysis uses the metropolitan-nonmetropolitan delineations produced by the Office of Management and Budget (OMB), which is the only comparable information provided in the publicly-available CPS. According to these measures, an individual is classified as metropolitan (a crude approximation to the Center's definition of urban) if they reside in a county with an urbanized area of at least 50,000 population, or in a county with significant social and economic ties to an

urbanized core county as determined by commuting flows. Individuals are classified as nonmetropolitan (rural) if they live outside of a metropolitan area, so defined.³

The foreign-born were defined as those born outside the U.S. or its territories, exclusive of those born abroad of American parents. The foreign-born include both citizens and non-citizens of the U.S. It is important to recognize that some foreign-born individuals reside in the U.S. and Pennsylvania without legal status. Recent estimates suggest that, in 2016, there were 10.7 million unauthorized (often called “illegal” or “undocumented”) immigrants residing in the U.S., with 170,000 in Pennsylvania (Passel and Cohn, 2018). Unauthorized immigrants are foreign-born people who are not naturalized citizens, legal permanent residents, asylees and refugees, or others who are legal temporary residents (Passel and Cohn, 2018). Although unauthorized immigrants are under-represented in household surveys, such as the CPS and ACS, they are present in these data. They are not, however, straightforwardly identifiable (Van Hook and Bachmeier, 2013). The foreign-born statistics presented in this report thus include some unauthorized immigrants.

Another group of foreign-born individuals are refugees. In 2017, Pennsylvania ranked 8th among all states as the state of residence for new refugee arrivals, with 2,147 or 4.0 percent of the national total, and was among the top 10 states in the previous two years. On a per capita basis, in 2017, Pennsylvania was in the “middle of the pack” as a destination for refugees. During the period 2000-2017, the top countries of origin among refugees were Burma, Iraq, Somalia, Bhutan, Iran, Cuba, Democratic Republic of Congo, Ukraine, Bosnia & Herzegovina, and Sudan (Mossaad, 2019). The very small number of refugees as a percentage of the

³ With the public-use CPS, it is not possible to differentiate between nonmetropolitan residents of so-called micropolitan counties—which include or have commuting ties to smaller urbanized areas of 10,000-49,999 persons—and other places that lack such population centers. Therefore, the research treated all nonmetropolitan residents the same, similar to the approach using the ACS data.

population renders even largescale household surveys of little value for assessing the countries of origin, employment status, and other characteristics of refugees residing in rural Pennsylvania. Nevertheless, like unauthorized immigrants, they are present in the data analyzed here. Since many are working and contributing to Pennsylvania's economy, their inclusion yields an arguably more valid portrait of the foreign-born workforce in the Commonwealth.

Analytic Strategy

The analysis proceeds as follows with respect to the objectives.

Objective #1: Produce up-to-date estimates of the foreign-born share of the workforce in rural Pennsylvania. Drawing on data from the 2016 ACS, this study estimated the percentage of the workforce in rural Pennsylvania that is foreign-born. The workforce is defined to include all individuals aged 16 to 64 years irrespective of their labor force participation status, and who are therefore working or potentially available to work. For comparison, estimates of the foreign-born share of the workforce in urban Pennsylvania are calculated. Finally, this study estimated the foreign-born share of the workforce in each PUMA in Pennsylvania and produced maps that illustrate these estimates, overlaid with an indicator of the PUMA's rural (urban) status.

Objective #2: Develop a statistical profile of the demographic and economic characteristics of rural Pennsylvania's foreign-born workforce. This research analyzed data from the 2016 ACS to describe the demographic and economic characteristics of the foreign-born workforce in rural Pennsylvania, and made comparisons with urban and native-born populations where appropriate. This analysis includes characteristics such as age, marital status, race/ethnicity, educational attainment, poverty status, employment status, citizenship status, and English language skills. The research also estimated comparable statistics for the urban foreign-

born workforce and the native-born workforce in both rural and urban areas. Second, the analysis provided estimates of the distribution of rural foreign-born workers across industry and occupation groups to determine the most (least) common industries and occupations of employment among this population. To facilitate the trend analysis (see below), this study used versions of the U.S. Census Bureau's industry and occupation classification schemes that are harmonized over time (Ruggles et al., 2015). Comparable estimates were calculated for urban foreign-born workers and rural and urban native-born workers and estimates of the differences between these populations were also produced. Third, and relatedly, the percentage of all rural workers in each industry and occupation group that is foreign-born were estimated. This report analyzed differences in the representation of foreign-born workers across industry-occupation groups and compared patterns between rural and urban areas.

Fourth, this study estimated the percentage of the foreign-born workforce that owns a farm or non-farm business, in whole or in part, as indicated by the receipt of business income. The analysis compared differences in rates of business ownership between the rural foreign-born workforce, the urban foreign-born workforce, and the native-born workforces in rural and urban areas. Fifth, the research described the socioeconomic and demographic characteristics of the foreign-born workforce and the three comparison groups of interest. The characteristics that are described include age, sex, marital status, family size, educational attainment, poverty status, race and ethnicity, years of residence in the U.S., English language skills, and citizenship status.

Sixth and finally, this research analyzed the income composition of the rural foreign-born workforce and compared their source-specific average income with that of the foreign-born population in urban areas and the rural and urban native-born populations. The research analyzed data from the 2016 ACS, providing an income profile of: (a) total income; (b) wage and salary;

(c) social security; (d) welfare; (e) interest, dividend, and rental; (f) retirement; and (g) supplementary security income. Furthermore, the research analyzed data from the 2013-2017 CPS, which provides more detailed information on personal income than the ACS. Using the CPS, the research decomposed income as: (a) wage and salary income; (b) business income; (c) private transfers (e.g., child support); and (d) public transfers (e.g., welfare, unemployment benefits).

Objective #3: Analyze changes in the demographic and economic composition of the rural foreign-born workforce over time. The analyses of the ACS described under objectives one and two above for both 2010 and 2000 were replicated using the 2010 ACS and the 2000 Decennial Census, respectively. This report then compared these statistical profiles of rural Pennsylvania's foreign-born workforce across years and compared trends for this population over time with the trend observed among their urban counterparts and native-born rural and urban residents. As described above, rural and urban classifications were assigned using consistent PUMA boundaries and 2016 population density figures.⁴

Objective #4: Synthesize empirical findings, identify public policy implications, and develop relevant, evidence-based policy recommendations. This report summarizes, synthesizes, and evaluates the results of the abovementioned analyses.

Engagement with Stakeholders

Given the focus on secondary data analysis, this study sought to “ground truth” the findings and otherwise gain information to improve the interpretation of the findings and identify

⁴ Note that the researchers did not replicate the supplemental analysis of the CPS (Objective 2) over time. The universe of metropolitan and nonmetropolitan counties used to identify the rural-urban status of individuals in the CPS changed twice over the 2000 to 2016 period. These changes cannot be controlled for, therefore confounding analysis of change over this time period.

limitations to the analysis. This was done by assembling an advisory board of individuals who conduct field-based research, outreach, and programming with the foreign-born population in rural Pennsylvania. After initial outreach to approximately 10 individuals, commitments to participate from six of these experts was secured. They were sent initial drafts of the report with requests for feedback. While just half of those six individuals fully participated, the authors were pleased to engage with two members of Penn State Extension Services—Tara Auxt and Maria Gorgo-Gourovitch—and the Bilingual Education Adviser for the Pennsylvania Department of Education—Robert Measel. Phone and e-mail correspondence yielded valuable, constructive feedback that informed revisions to the analyses and assisted with the interpretation of the findings. While this input shaped various parts of the report, a section is included at the conclusion of this document that discusses a number of specific points raised by the advisory board.

Results

Foreign-Born Share of Rural Pennsylvania's Workforce

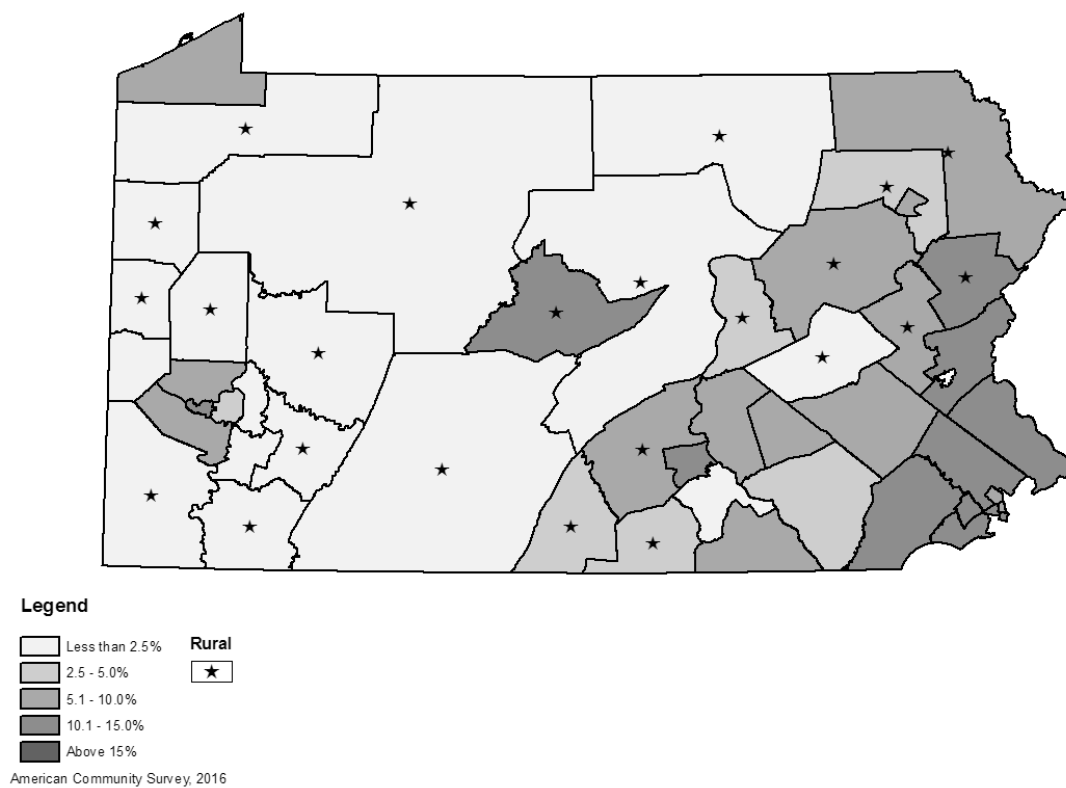
The first analyses estimated the share of rural Pennsylvania's workforce that is foreign-born as of 2016, the most recent data that were available at the time of analysis. Estimates of the specific regions in rural Pennsylvania where the foreign-born are over- or under-represented in the workforce are also included. Overall, 3.5 percent of rural Pennsylvania's workforce was foreign-born in 2016, compared with 10.7 percent in urban Pennsylvania and 8.3 percent across the entire Commonwealth⁵. For context, note that these levels represent a marked increase within

⁵ Confidence intervals at the 95% level were calculated for the proportion of foreign-born individuals in rural and urban Pennsylvania, as well as for the state as a whole. The confidence intervals are as follows: rural (0.032 - 0.039), urban (0.101 - 0.109), and state (0.080 - 0.086).

just the past two decades. At the time of the 2000 Census, for example, the foreign-born constituted 2.0 percent and 6.3 percent of the workforce in rural and urban Pennsylvania, respectively; and the corresponding figures in 2010 were 2.8 percent and 9.1 percent.

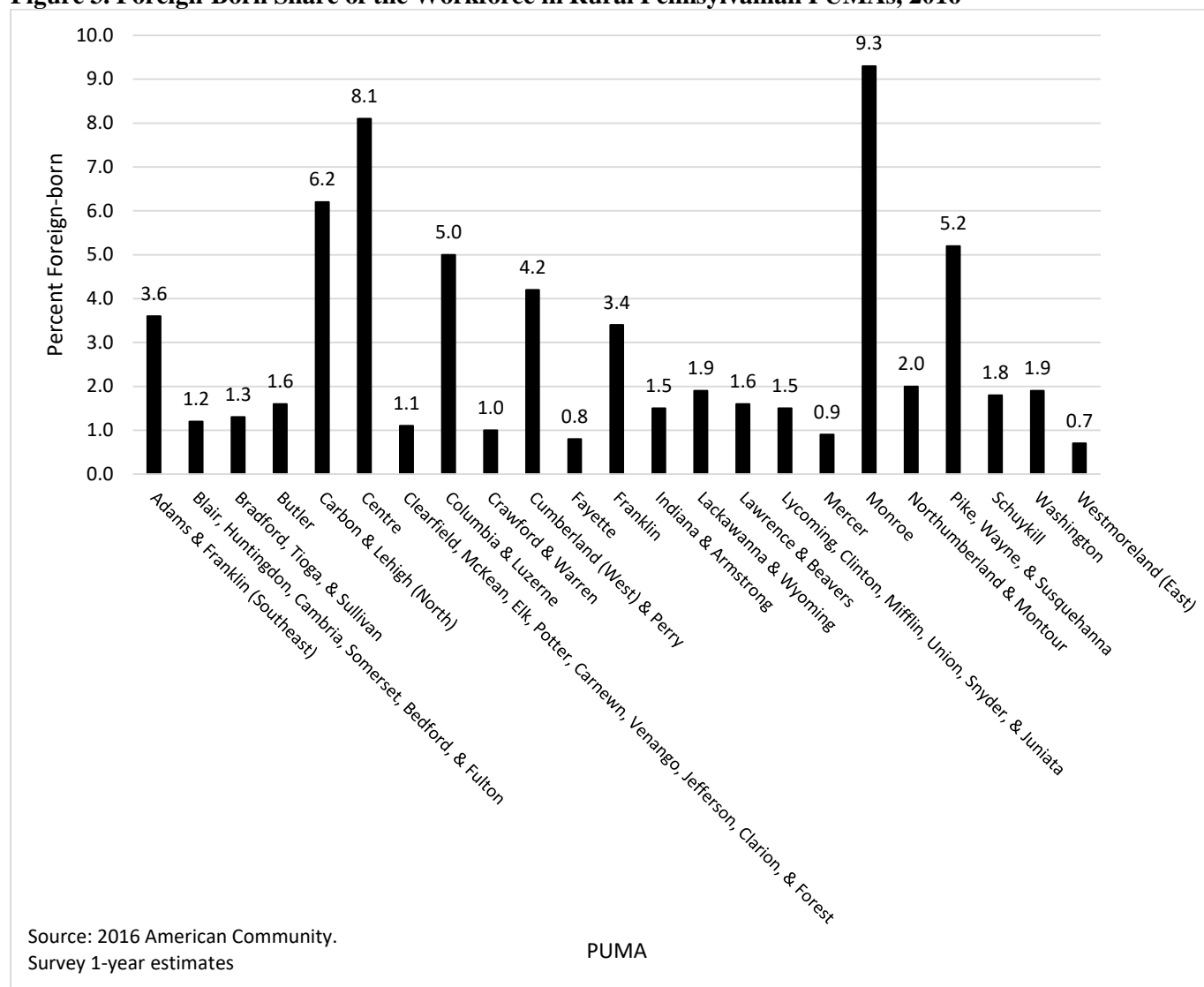
A supplementary analysis of ACS provided information on the top countries of origin among Pennsylvania's foreign-born workforce (Appendix Table A1). The largest shares of foreign-born workers in rural areas of the Commonwealth are from Mexico (10.6%), the Dominican Republic (9.3%), China (9.0%), and India (7.4%). A similar pattern is observed with respect to the urban foreign-born workforce, but among this population the largest share of workers is from India (11.2%), followed by China (8.1%) and then Mexico (6.8%) and the Dominican Republic (5.6%).

Figure 2. Foreign-Born Share of the Workforce by Pennsylvania PUMA, 2016



The representation of foreign-born members of the workforce varies geographically across rural (and urban) Pennsylvania. This variation is illustrated in Figure 2, which maps the foreign-born share of the workforce for each PUMA in the state, with an overlay denoting rural PUMAs. Most of the PUMAs with the highest foreign-born population shares—exceeding 10 percent—are in and around Philadelphia, Allentown, and Pittsburgh, and are classified as urban. While many of the rural PUMAs have low foreign-born population shares—less than or equal to 5 percent—a number of the rural PUMAs in the eastern part of the state have somewhat higher shares, generally falling between 5 and 10 percent. These trends are documented further in Figure 3, which illustrates the foreign-born share of each rural PUMA in Pennsylvania. This graph reveals that the representation of foreign-born individuals in the workforce varies considerably across the Commonwealth. In only three rural PUMAs—those encompassing Monroe, Centre, and Carbon and the northern parts of Lehigh counties—does the foreign-born share of the workforce meet or exceed 6 percent; and in only three others does this share exceed 4 percent. The latter includes the PUMAs respectively encompassing (a) Pike, Wayne and Susquehanna counties, (b) Columbia and Luzerne counties; and (c) western Cumberland and Perry counties.

Figure 3. Foreign-Born Share of the Workforce in Rural Pennsylvanian PUMAs, 2016



Socioeconomic Profile of the Rural Foreign-Born Population

The next set of analyses describes the socioeconomic characteristics of the foreign-born workforce in Pennsylvania and draws comparisons with native-born members of the rural workforce, as well as with their urban counterparts (Table 1). With respect to basic demographic characteristics, the research shows that the sex distribution of foreign-born members of the rural workforce is slightly skewed towards female (51.6%) relative to the statewide average (50.7%) and native-born members of the rural workforce (49.7%). While these differences are modest—

and may mask important differences in the sex distribution of actual workers—they run contrary to popular conceptions of rural foreign-born workers as detached single men. Foreign-born members of the rural workforce are younger than their native-born rural counterparts, with mean ages of 40.6 and 41.6 years, respectively. The mean age of the foreign-born workforce in urban Pennsylvania was 40.4 years, nearly the same as among native-born members of the urban workforce (40.5 years).

Foreign-born individuals in the rural workforce are much more likely to be married (60.6%) than their native-born rural counterparts (50.2%). Members of the foreign-born workforce in urban parts of the commonwealth are near-equally likely to be married (61.3%) than their rural counterparts, while native-born individuals in the urban workforce are least likely to be married (44.8%). The share of individuals in the workforce who are divorced and are not remarried was highest among the rural native-born population, where approximately 14 percent of individuals reported being separated or divorced. In contrast, approximately 11 percent of foreign-born members of the rural workforce were divorced and not remarried—slightly more than among the foreign-born subset of the urban workforce (10.1%) and slightly less than native-born individuals in the urban workforce (11.7%). Correspondingly, the rural foreign-born (26.5%), rural native-born (33.7%), and urban foreign-born (27.1%) populations all had percentages of single/never married individuals lower than the Pennsylvania-wide mean (38.2%), while nearly 42 percent of urban native-born individuals reported being single/never married. Consistent with the high levels of marriage among foreign-born members of the workforce in both rural and urban Pennsylvania, the mean family size among these two populations are—at 3.2 and 3.3, respectively—similar to and somewhat higher than the state-wide average (3.2) and higher than the native-born workforce average in rural and urban areas (both 3.0).

Racial and ethnic minorities are over-represented among foreign-born members of the rural Pennsylvanian workforce relative to the state-wide average and the native-born workforce. Whereas 94.0 percent of the native-born rural workforce identified as non-Hispanic white, just over one-quarter of foreign-born individuals (27.6%) in the rural workforce identified as belonging to this ethno-racial group. Among the rural foreign-born population, 36.1 percent identified as Hispanic, 26.9 percent as Asian/Pacific Islander, and 8.1 percent as non-Hispanic Black. The respective shares of all racial and ethnic minority groups were no greater than 2.3 percent (Hispanic) among the rural native-born workforce. Overall, the rural foreign-born workforce is as diverse as the urban foreign-born workforce, although among the latter the Hispanic population share is lower (22.8%) and Asian population share is higher (35.4%) than among the former. Among native-born individuals in Pennsylvania's urban workforce, 76.1 percent identified as non-Hispanic white, 6.1 percent as Hispanic, 1.1 percent as Asian/Pacific Islander, 14.1 percent as non-Hispanic black, and 1.9 percent as another group.

Educational attainment among the rural foreign-born workforce is noticeably different from their urban counterparts and the native-born workforce in both rural and urban areas. On the one hand, a disproportionate share of the rural foreign-born have low educational attainment, having not completed high school (20.3% vs. a state-wide average of 10.8%). This compares with 16.7 percent among the urban foreign-born and less than 11 percent among both the rural and urban native-born. On the other hand, more than 30 percent (30.7%) of the foreign-born members of the workforce in rural areas earned a bachelor's degree or higher—nearly 9 percentage points higher than the share of rural native-born individuals in the workforce (22.0%).⁶ College completion rates were somewhat higher among native-born members of the

⁶ The category "1-3 years of college" includes individuals who (a) completed 1 year of college credits but did not earn a degree; and (b) completed an associate's degree.

urban workforce (33.3%), and highest among the urban foreign-born workforce (38.7%).

Notably, the share of the foreign-born urban workforce with less than a high school degree (16.6%) is also higher than the state-wide average, with the implication that the foreign-born workforce in both rural and urban areas is bifurcated with respect to educational attainment.

Consistent with the relatively large share of the rural foreign-born population with less than a high school degree, rates of poverty were highest among this population. More than one-fifth (21.1%) of the foreign-born workforce were in poverty, according to the official definition of the U.S. federal government, which is more than 8 percentage points higher than the poverty rate among native-born members of the rural workforce (12.6%) and nearly 10 percentage points higher than among the native-born urban workforce (11.2%). The poverty rate among the urban foreign-born is above the state-wide average (17.3%) but lower than among the rural foreign-born. This general pattern of between-group differentials is also observed with respect to deep poverty, defined as when an individual's family has an income below 50 percent of the official poverty threshold. Notably, however, those in deep poverty represent a greater share of the poor among the rural foreign-born (52.3%) than any other group considered (none exceeded 47.2%).

Looking to participation in the labor force, more than three-fifths (69.1%) of Pennsylvania's adults are employed and in the labor force. There is little difference between the rate of urban foreign- and native-born individuals who are employed (69.7% and 70.9%); however, there is a larger gap between the percentage of foreign-born and natives employed in rural areas (62% and 66.9%). Rural foreign-born have the highest rate of unemployment (4.6%) compared to all other groups (none exceeded 4%). However, there is a lower rate of unemployment among urban foreign-borns (3.6%) than their native counterparts (3.9%). Additionally, rural individuals, both foreign-born and native, have higher rates of those not in the

labor force than Pennsylvania as a whole (33.4% and 29.4%, respectively, compared to the state at 27.1%). Among the four groups, rural foreign-born individuals have the highest percent of those who are not in the labor force.

Among the foreign-born workforce in both rural and urban areas, most individuals have either been in the United States for 5 or fewer years or more than 20 years. Across the rural workforce, 20.9 percent of foreign-born individuals reported being in the United States for 0-5 years, a level comparable to the urban workforce (20.5%); and 38.9 percent of the rural foreign-born workforce has been in the country for 21 years or more, a somewhat higher share than among the urban foreign-born workforce (33.9%). Corresponding to the fairly large shares of the foreign-born workforce residing in the country for a sustained period of time, the research found that a majority of this population has attained citizenship, and this is true in both rural (53.2%) and urban (52.8%) areas. Likewise, 21.2 percent of foreign-born individuals in the rural workforce reported speaking only English, 62.4 percent speak English either well or very well, and less than 4 percent (3.8%) spoke no English. Notably, the average English language skills among the rural foreign-born workforce are slightly higher than among the urban foreign-born, among whom 5.1 percent speak no English and 14.8 percent speak English but not well.

Table 1. Socioeconomic Profile of Pennsylvania Workforce, 2016Percentages, *Means*, and (Standard Deviations)

	PA	Rural		Urban	
	Total	Foreign-born	Native-born	Foreign-born	Native-born
Sex					
Male	49.4	48.4	50.3	48.9	49.0
Female	50.7	51.6	49.7	51.1	51.0
Age	40.8 (14.2)	40.6 (13.2)	41.6 (14.6)	40.4 (12.6)	40.5 (14.3)
Marital Status					
Married	47.8	60.6	50.2	61.3	44.8
Separated/divorced	12.3	11.0	14.0	10.1	11.7
Widowed	1.7	1.9	2.1	1.5	1.6
Single/never married	38.2	26.5	33.7	27.1	41.9
Family Size	3.2 (1.6)	3.2 (1.6)	3.0 (1.6)	3.3 (1.7)	3.0 (1.6)
Race/Ethnicity					
Non-Hispanic White	77.2	27.6	94.0	24.1	76.1
Non-Hispanic Black	10.4	8.1	1.9	15.3	14.1
Hispanic	6.9	36.1	2.3	22.8	6.1
Asian/Pacific Islander	3.7	26.9	0.3	35.4	1.1
Other	1.8	1.3	1.4	2.5	1.9
Educational Attainment					
Less than high school	10.8	20.3	10.8	16.6	9.9
High school	38.0	30.2	45.3	28.3	35.7
1-3 years of college	20.9	18.8	21.9	16.5	21.0
Bachelor's degree+	30.3	30.7	22.0	38.7	33.3
Poverty Status					
Non-poor	87.8	79.0	87.4	82.7	88.8
Poor	12.2	21.1	12.6	17.3	11.2
Deep poverty	5.5	11.0	5.3	7.7	5.3
Employment Status					
Employed, in labor force	69.1	62.0	66.9	69.7	70.9
Unemployed, in labor force	3.8	4.6	3.7	3.6	3.9
Not in labor force	27.1	33.4	29.4	26.7	25.2
Years of Residence in US					
Not Applicable	89.5	--	100.0*	--	100.0*
0-5 years	2.0	20.9	--	20.5	--
6-10 years	1.3	12.0	--	13.3	--
11-15 years	1.7	13.8	--	17.0	--
16-20 years	1.5	14.4	--	15.4	--
21 or more years	4.0	38.9	--	33.9	--

Table 1 (continued). Socioeconomic Profile of Pennsylvania Workforce, 2016
Percentages, Means, and (Standard Deviations)

	PA	Rural		Urban	
	Total	Foreign-born	Native-born	Foreign-born	Native-born
Naturalized citizen	4.4	53.2	--	52.8	--
Not a citizen	4.0	46.8	--	47.2	--
English-Language Skills					
Does not speak English	0.6	3.8	0.0	5.1	0.3
Speaks English, but not well	1.6	12.6	0.2	14.8	0.5
Speaks English well/very well	9.9	62.4	3.2	58.7	6.4
Only speaks English	87.9	21.2	96.6	21.5	92.8

Source: American Community Survey, 2016 1-year estimates.

Note: Numbers in italics are mean values; numbers in parentheses are standard deviations of the mean; all numbers rounded to the nearest tenth. *When evaluating years or residence in the United States, individuals who were born abroad to U.S. parents were all recoded as "Not applicable."

The Foreign-Born Rural Workforce Across and Within Industries

The next analyses examined how foreign-born members of the rural workforce are distributed across different industries, and identified the industries in which the foreign-born are over- and under-represented. Beginning with the former (Table 2), results show that foreign-born members of the rural workforce are concentrated in a select number of industries, particularly professional and related services (22.1%), retail trade (16.8%), and manufacturing (12.0%). In this case, professional and related services include those in the healthcare sector, such as physicians, dentists, nurses, and those who work in hospitals or personal care facilities. Somewhat smaller shares of the foreign-born workforce are currently or recently worked in transportation (7.0%), personal services (6.4%), business and repair services (4.8%), and finance, insurance and real estate (3.9%). For reference, note that transportation includes individuals who work in: air, rail, water, or truck transportation; bus, taxi, limousine, and urban transit services; scenic and sightseeing transportation; postal service and couriers and messengers; and warehousing and storage. Those who report working in the personal service industry report jobs such as running barber shops and beauty salons, and other such services; dry cleaning and

laundry services; and funeral homes, cemeteries, and crematories. Less than 3 percent of the foreign-born workforce was in any of the other industry categories. Relative to the native-born workforce in rural areas, the foreign-born population is noticeably under-represented in mining (0.3% vs. 0.9%), construction (2.0% vs. 5.8%) and public administration (2.1% vs. 3.9%) and over-represented in personal services (6.4% vs. 2.3%) and transportation (7.0% vs. 4.1%).

Only some of these nativity-based differences in representation were observed in urban areas. For example, the share of foreign-born urban workers in construction (4.0%) was less than 1 percentage-point below that of native-born urban workers (4.7%), but foreign-born urban workers remained much less likely to be in public administration (1.6% vs. 3.5%) than their native-born peers. Likewise, in urban areas, foreign-born workers were over-represented in personal services (4.7% vs. 2.5%) relative to native-born workers, but were more equally represented in the transportation sector (4.2% vs. 3.7%) than what was observed in rural areas.

Table 2. Distribution of Pennsylvania Workforce by Industry, 2016
Percentages

	PA	Rural		Urban	
	Total	Foreign-born	Native-born	Foreign-born	Native-born
Agriculture, forestry and fisheries	1.6	2.2	2.0	2.1	1.4
Mining	0.4	0.3	0.9	0.1	0.2
Construction	5.0	2.0	5.8	4.0	4.7
Manufacturing	10.1	12.0	11.8	11.4	9.1
Transportation	3.9	7.0	4.1	4.2	3.7
Communications	0.8	1.0	0.6	0.8	0.9
Utilities and sanitary services	1.0	0.4	1.3	0.5	1.0
Wholesale trade	2.2	1.7	1.9	2.0	2.3
Retail trade	16.1	16.8	16.5	14.8	16.1
Finance insurance and real estate	5.2	3.9	3.6	4.4	6.1
Business and repair services	5.1	4.8	4.1	7.2	5.4
Personal services	2.7	6.4	2.3	4.7	2.5
Entertainment and recreation services	1.4	0.6	1.2	0.9	1.6
Professional and related services	26.0	22.1	24.0	23.4	27.3
Public administration	3.5	2.1	3.9	1.6	3.5
Experienced unemployed not classified by industry	0.9	1.2	0.6	1.0	1.0
Has not worked in 5+ years	14.3	15.6	15.3	17.0	13.5
Total	100.0	100.0	100.0	100.0	100.0

Source: American Community Survey, 2016 1-year estimates. Note: All numbers are percentages; all numbers rounded to the nearest tenth.

It is also important to note the representation of the four groups of interest within industries—for example, to identify the industries that are particularly dependent on rural foreign-born workers (Table 3). Keeping in mind that the rural foreign-born workforce represents a relatively small share of the total population in rural (3.5%) and urban (10.7%) Pennsylvania, estimates reveal that this population is most represented in the personal services workforce (2.5%), followed by transportation (1.9%), and agriculture, forestry and fisheries (1.4%). Similar to the rural foreign-born workforce, the urban foreign-born population is also most represented in personal services (13.0%), and agriculture, forestry and fisheries (9.5%). However, there is also a large representation (10.3%) of urban foreign-born individuals in the

business and repair services workforce, unlike the 1 percent of rural foreign-born individuals in this same field.

Table 3. Distribution of Industry-Specific Workforce by Nativity and Rural/Urban Pennsylvania Residence, 2016
Percentages

	Rural		Urban	
	Foreign-born	Native-born	Foreign-born	Native-born
Agriculture, forestry, and fisheries	1.4	36.5	9.5	52.6
Mining	0.9	71.2	2.4	25.5
Construction	0.4	35.3	5.9	58.4
Manufacturing	1.2	35.3	8.3	55.2
Transportation	1.9	31.8	8.0	58.3
Communications	1.2	22.2	7.1	69.6
Utilities and sanitary services	0.4	37.9	3.7	58.0
Wholesale trade	0.8	26.4	6.8	65.9
Retail trade	1.1	31.0	6.7	61.2
Finance insurance and real estate	0.8	21.2	6.2	71.8
Business and repair services	1.0	24.3	10.3	64.5
Personal services	2.5	26.2	13.0	58.2
Entertainment and recreation services	0.5	26.2	4.6	68.7
Professional and related services	0.9	27.9	6.7	64.5
Public administration	0.6	34.3	3.5	61.6
Experienced unemployed not classified by industry	1.5	20.8	8.3	69.3
Has not worked in 5+ years	1.1	32.4	8.7	57.8

Source: American Community Survey, 2016 one-year estimates. Note: All numbers are percentages; all numbers rounded to the nearest tenth.

Looking beyond industry, Table 4 shows the distribution of occupations of the Pennsylvania workforce by nativity and rural/urban residence. Some noteworthy findings are seen regarding the foreign-born populations in both rural and urban areas. While the rural foreign-born population comprises a small percentage of most occupations, they notably make up 2.1 percent of workers in farming, forestry, and fishing occupations, as well as 2.9 percent of military jobs. These are the two occupations with the highest percentages of rural foreign-born

individuals. By contrast, in urban areas foreign-born workers are disproportionately represented within service occupations and as operators, fabricators, and laborers; in these occupations, urban foreign-born individuals make up 11 percent of the workers.

Table 4. Distribution of Occupations of Pennsylvania Workforce by Nativity and Rural/Urban Residence, 2016
Percentages

	Rural		Urban	
	Foreign-born	Native-born	Foreign-born	Native-born
Managerial and professional specialty	0.9	23.3	7.1	68.8
Professional specialty	1.3	24.9	9.4	64.4
Social recreation and Religious workers	0.6	22.2	4.9	72.3
Technical sales and administrative support	1.1	28.1	7.0	63.9
Service	1.3	29.1	11.0	58.7
Farming, forestry, and fishing	2.1	38.1	10.7	49.1
Precision production, craft, And repair	0.6	36.4	6.7	56.3
Operators, fabricators, and laborers	1.7	37.4	11.0	50.0
Military	2.9	23.7	3.4	70.0
Experienced unemployed, not classified by occupation	1.6	18.2	14.6	65.6
Has not worked in 5+ years	1.2	30.5	11.4	56.9
Total	1.2	28.9	8.8	61.1

Source: American Community Survey, 2016 one-year estimates. Note: All numbers are percentages; all numbers rounded to the nearest tenth.

Profile of Personal Income Among Members of the Foreign-Born Workforce

This section provides a comparative profile of income streams for foreign- and native-born adults living in rural and urban Pennsylvania. The ACS provides a brief snapshot of sources of personal income, including wage and salary; social security; welfare; interest, dividend, and

rental; retirement; supplementary security income; and other (not specified)⁷. Additionally, this section also includes supplementary data from the U.S. Current Population Survey (CPS). More detailed than the ACS, the version of the CPS that is fielded in March of each year has a battery of questions about the total amounts of income received in the entirety of the previous year from several specific sources. These include Wage and Salary Income, Non-Farm Business Income, Farm Business Income, Child Support, Alimony, Assistance (regular assistance from family members or relatives), Social Security, Welfare (TANF), Supplemental Security Income (SSI), Unemployment Benefits, Worker's Compensation, Veteran's Benefits, Survivor's Benefits, Disability, Retirement, Interest, Dividends, Rent, Educational Assistance, and Other (Not Specified). The income data presented for Pennsylvania adults are drawn from the 2016 American Community Survey and the March Current Population Surveys for the years 2013-2017 combined.

Table 5. Profile of Personal Incomes, Pennsylvania, 2016
Percentages

	PA	Rural		Urban	
	Total (N=79,646)	Foreign-born (N=767)	Native-born (N=33,173)	Foreign-born (N=3,972)	Native-born (N=41,734)
Wage and salary	73.8	70.1	71.4	72.2	76.0
Social security	6.9	3.3	8.5	2.9	6.1
Welfare	1.8	1.3	1.7	1.8	1.9
Interest, dividend, and rental	10.4	8.5	9.6	8.5	11.2
Retirement	4.7	2.9	5.7	1.4	4.3
Supplementary security income	3.2	1.0	3.4	1.6	3.3
Other, not specified	5.3	3.8	6.1	3.4	4.9

Source: American Community Survey, 2016. Note: Numbers represent percentages. The categories of reported income are not mutually exclusive – an individual can report income from multiple sources. Because of this, the column percents will not add up to 100%.

Table 5 presents the the percentage of adults receiving any positive income from a given source. By far the most common source of income is earnings from formal employment in the

⁷ This section only discusses the 2016 data; however, data for 2010 and 2000 can be found in the Appendix.

form of wages and salaries. In urban Pennsylvania, foreign-born individuals are less likely to report wage and salary income (72.2%) than their native-born counterparts (76.0%). However, urban foreign-born individuals are slightly more likely to report this than both rural native-born (71.4%) and foreign-born (70.1%) individuals. All other sources of income are much less commonly received, but a few of the differences by residence and/or nativity are worth highlighting. Both rural and urban native-born individuals are much more likely to report income from social security (8.5% and 6.1%, respectively) than their foreign-born counterparts (3.3%, 2.9%). The same pattern can also be noted for retirement, where more rural and urban native-born individuals report retirement income (5.7% and 4.3%) than both rural and urban foreign-born individuals (2.9% and 1.4%). Welfare, along with interest, dividend, and rental, both show much less variation in the percent of adults who report income from these sources.

Table 6. Profile of Personal Incomes, 2016
Average Values (\$) and (Standard Deviations)

	PA	Rural		Urban	
	Total	Foreign-born	Native-born	Foreign-born	Native-born
Total	44,464 (55,835)	38,383 (56,118)	38,007 (43,350)	51,852 (68,215)	48,963 (62,386)
Wage and salary	45,590 (53,270)	37,740 (51,362)	38,787 (40,911)	53,604 (67,340)	50,081 (59,126)
Social security	11,632 (6,859)	9,884 (8,418)	11,717 (6,714)	9,611 (6,974)	11,647 (6,984)
Welfare	1,964 (2,711)	2,785 (1,785)	1,726 (2,634)	2,317 (2,853)	2,096 (2,753)
Interest, dividend, and rental	10,975 (34,702)	12,544 (36,195)	9,632 (32,586)	11,626 (33,587)	11,824 (36,116)
Retirement	20,480 (23,391)	14,959 (24,116)	20,017 (22,784)	16,928 (19,375)	21,155 (24,111)
Supplementary security income	8,872 (4,542)	6,212 (2,139)	8,781 (4,645)	7,849 (5,139)	9,009 (4,429)
Other, not specified	8,450 (10,835)	7,634 (12,542)	8,108 (10,810)	10,737 (12,678)	8,649 (10,684)

Source: American Community Survey, 2016. Note: Numbers represent the mean value (in dollars); numbers in parentheses are standard deviations. All numbers were rounded to the nearest dollar. *All mean values presented in this table only account for those who reported income greater than \$0.

In addition to the prevalence of receipt of income of different types, the amount received is also an important dimension of any income profile. Table 6 shows the mean total amount of income received by source among those who received positive income from a given source. For example, the table shows the mean wage and salary income (earnings) received among those who had any reported earnings. Again, data are shown for the foreign- and native-born within rural and urban areas. Table 5 made clear that many forms of income are uncommonly received; as such, means derived from very small numbers of observations need to be interpreted with extreme caution. For this reason, the focus of this analysis will be primarily on the more commonly received income types. By and large, and not surprisingly, average earnings (wages and salaries) are higher in urban than rural Pennsylvania. In rural areas, there is no meaningful difference between foreign- and native-born individuals. Interestingly, and contrary to expectation, urban immigrants report a slightly higher (\$53,604) average income from wages and salaries than urban natives (\$50,081). While there are some income categories where foreign-born individuals report slightly higher averages than native-born individuals (wage and salary; welfare; and interest, dividend, and rental), in both rural and urban Pennsylvania they are at a notable disadvantage (i.e. social security and retirement).

As noted, the ACS is superior to the Current Population Survey (CPS) for providing a statistical portrait of rural Pennsylvania given its much larger sample size. Nonetheless one advantage of the CPS is the more detailed income categories available. The ACS-based income analysis presented above is replicated here using the CPS. In addition to the sample size difference, comparison between the ACS and CPS results is compromised also by the different definition of “rural” used. The CPS analysis defines rural as non-metropolitan whereas the ACS data allows a definition that comes closer to that of the Center for Rural Pennsylvania. With

these caveats in mind, Table 7 shows the percentage of adults receiving any positive income from a given source. By far the most common source of income is earnings from formal employment in the form of wages and salaries. In metro Pennsylvania, foreign-born individuals are less likely to report wage and salary income (67.5%) than their native-born counterparts (72.7%). There is no nativity difference in non-metro areas and the corresponding percentages (69.4%, 69.5%) fall between the extremes seen in metro counties. All other sources of income are much less commonly received, but a few of the differences by residence and/or nativity are worth highlighting. Non-farm business income is an indicator of entrepreneurship, and in urban Pennsylvania the foreign-born (5.1%) are slightly more likely than their native-born counterparts (3.8%) to receive non-farm business income. The nativity pattern in non-metro areas is the opposite, with the native-born exhibiting higher non-farm business income receipt than the foreign-born (5.4% vs. 1.4%). Business income from a farm is far less common, particularly among the foreign-born. Indeed, among CPS respondents for the years 2013-2017 combined, virtually no foreign-born individuals in non-metro areas reported farm income. Certainly, there are immigrants who operate farms in rural Pennsylvania. However, they did not fall into the CPS sample for these years. (That there are individuals reporting farm business income in *metropolitan* Pennsylvania underscores the fact that farming and agriculture are not restricted to non-metro counties.)

Table 7. Profile of Personal Incomes, Pennsylvania, 2013-2017
Percentages

	PA	Non-Metropolitan		Metropolitan	
	Total (N=16,662)	Foreign-born (N=72)	Native-born (N=2,204)	Foreign-born (N=1,401)	Native-born (N=12,985)
Wage and salary income	71.8	69.4	69.5	67.5	72.7
Non-farm business income	4.1	1.4	5.4	5.1	3.8
Farm business income	0.6	--	1.0	0.4	0.6
Child support	2.6	1.4	4.0	0.6	2.6
Alimony*	0.2	2.7	0.2	--	0.2
Assistance	0.9	--	0.5	1.2	0.9
Social security	6.3	9.7	8.2	3.6	6.3
Welfare	1.0	1.4	0.9	0.7	1.0
SSI	3.0	2.8	3.0	0.7	3.2
Unemployment benefits	4.0	11.1	5.4	1.6	3.9
Worker's compensation	0.5	--	0.8	0.5	0.5
Veteran's benefits	0.6	--	0.5	0.4	0.7
Survivor's benefits	0.7	1.4	0.5	0.3	0.7
Disability	1.2	--	1.2	0.6	1.2
Retirement	3.0	5.6	4.2	0.9	3.0
Interest	48.9	26.4	43.7	39.8	50.9
Dividends	12.6	9.7	9.2	8.4	13.6
Rent	3.8	2.8	3.6	3.8	3.9
Educational assistance	4.3	1.4	3.3	4.0	4.5
Other, not specified	0.8	--	0.8	0.4	0.9

Source: Current Population Survey, Annual Social and Economic Supplement 2013-2017. Note: Numbers represent percentages. The categories of reported income are not mutually exclusive – an individual can report income from multiple sources. Because of this, the column percents will not add up to 100%. *There were missing values for income from alimony; N=7,242.

Income from child support is less commonly reported among the foreign-born than native-born in both rural and urban areas. In metro Pennsylvania, Social Security income is more commonly received by the native-born (6.3%) than the foreign-born (3.6%). This perhaps reflects the relative youth of the urban immigrant population. Being an older population generally, Social Security receipt is higher in non-metro areas and, at 9.7 percent, is highest among the foreign-born – an apparently older population still. The nativity and residence differences in income receipt from two key means-tested transfer programs – TANF and SSI – shows no clear pattern. It cannot be definitively said that foreign-born Pennsylvanians are more or less likely to receive income from anti-poverty programs. Receipt of unemployment income is

decidedly lower in urban areas, particularly among the foreign-born. Perhaps reflecting greater economic distress in rural Pennsylvania, unemployment receipt is higher there, and is especially high among the foreign-born. The receipt of retirement income mimics the pattern observed for Social Security, again reflecting perhaps the age differences by nativity and residence alluded to above. Interest income is commonly received, especially in metro areas and especially among the native-born. The foreign-born disadvantage in interest income receipt is especially apparent in rural Pennsylvania, perhaps reflecting greater economic vulnerability among this group. An even stronger signifier of wealth is income from dividends and from rent. These differences generally but not uniformly suggest an advantage among the native-born. On balance, there is great similarity across the groups compared here in the pattern of receipt of different kinds of income. What differences emerge suggest a rural foreign-born population that is older.

In addition to the prevalence of receipt of income of different types, the amount received is also an important dimension of any income profile. Table 8 shows the mean total amount of income received by source among those who received positive income from a given source (see Appendix for the table of overall means). For example, the table shows the mean wage and salary income (earnings) received among those who had any reported earnings. Again, data are shown for the foreign and native-born within non-metro and metro areas. Table 7 made clear that many forms of income are not commonly received. As such, means derived from very small numbers of observations need to be interpreted with extreme caution. For this reason, the focus here is on the more commonly received income types. By and large, and not surprisingly, average earnings (wages and salaries) are higher in metro than non-metro Pennsylvania. In metro areas there is no meaningful difference in earnings between immigrants and natives. Interestingly, the rural disadvantage in earnings is apparent only among natives whose average

earnings (\$24,345) is two-thirds that of the rural foreign-born (\$34,784)⁸. Average Social Security income among those who have any is remarkably similar across groups, with the mean being the lowest among rural immigrants (\$10,449). When individuals do receive unemployment benefits, the income received is decidedly lower among the foreign than native-born, with the difference being especially apparent in rural Pennsylvania (\$4,032 vs. \$6,032). In both metro and non-metro areas, the foreign-born have higher average interest income than the native-born. In non-metro places, this foreign-born advantage is seen also in mean income from dividends. On balance, the portrait that emerges is not one of foreign-born disadvantage. Indeed, in non-metro Pennsylvania, the foreign-born appear to be advantaged in some respects (earnings, interest, dividend income) relative to their native-born counterparts.

Table 8. Profile of Personal Incomes, Pennsylvania, 2013-2017
Average Values (\$)

	PA	Non-Metropolitan		Metropolitan	
	Total	Foreign-born	Native-born	Foreign-born	Native-born
Wage and salary income	33,827 (52,616)	34,784 (44,137)	24,345 (29,821)	35,132 (59,407)	35,326 (54,808)
Non-farm business income	29,597 (42,704)	24,000 (0)	27,818 (27,671)	31,280 (39,611)	29,597 (46,136)
Farm business income	9,645 (17,609)	--	22,144 (21,695)	4,104 (4,542)	6,624 (15,287)
Child support	4,920 (4,509)	7,200 (0)	3,794 (3,024)	6,004 (2,429)	5,176 (4,821)
Alimony	11,169 (14,668)	8,372 (0)	1,638 (1,370)	--	13,040 (15,795)
Assistance	8,455 (13,373)	--	3,130 (4,237)	20,557 (21,594)	7,343 (11,536)

⁸ In addition to mean earnings, median earnings was also calculated. Similar patterns are observed for both means and medians. Foreign-born in nonmetro PA have a higher median income (\$36,000) than native-born in nonmetro PA (\$30,000). In contrast, foreign-born in metro PA have a lower median income (\$35,000) than native-born in metro PA (\$38,000).

Table 8 (continued). Profile of Personal Incomes, Pennsylvania, 2013-2017

Average Values (\$)

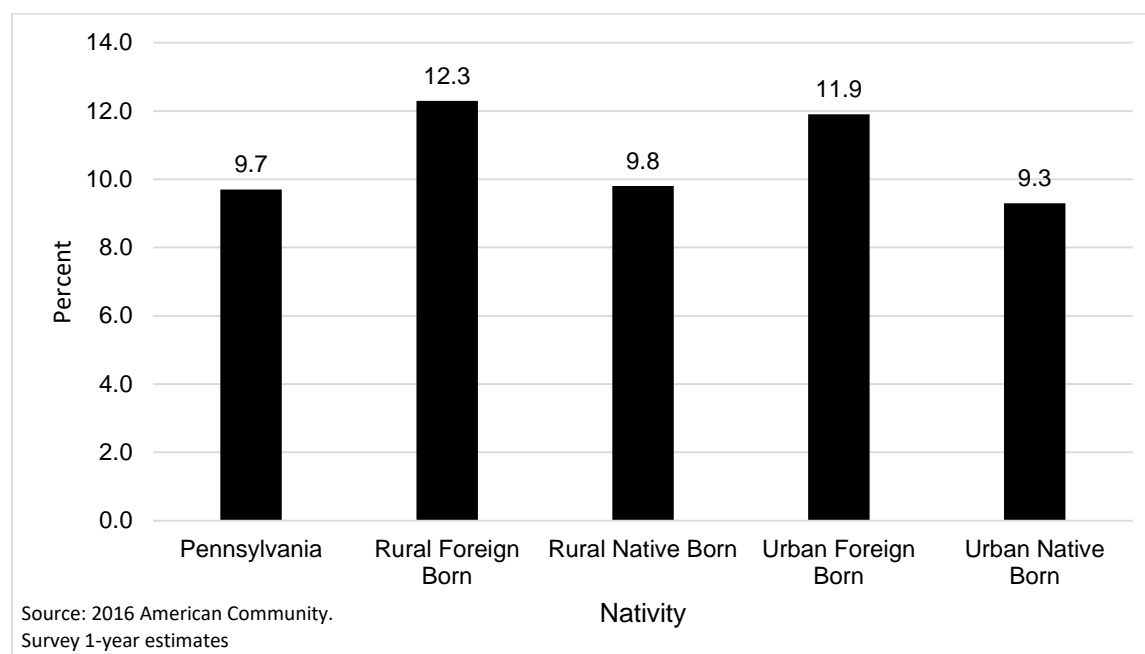
	PA	Non-Metropolitan		Metropolitan	
	Total	Foreign-born	Native-born	Foreign-born	Native-born
Social security	12,162 (7,134)	10,449 (3,623)	11,948 (7,136)	11,582 (6,371)	12,248 (7,181)
Welfare	2,595 (2,770)	1,800 (0)	1,349 (1,432)	2,969 (2,335)	2,742 (2,888)
SSI	8,123 (4,684)	5,075 (390)	7,225 (3,452)	8,777 (5,270)	8,246 (4,812)
Unemployment benefits	6,077 (5,889)	4,032 (3,329)	6,032 (5,857)	5,334 (5,032)	6,129 (5,934)
Worker's compensation	10,554 (11,375)	--	7,429 (6,486)	10,742 (10,741)	11,380 (12,304)
Veteran's benefits	11,725 (14,167)	--	18,581 (26,106)	2,692 (987)	11,424 (11,911)
Survivor's benefits	13,547 (23,105)	11,368 (0)	4,330 (3,573)	6,692 (6,747)	15,043 (24,708)
Disability	11,334 (12,358)	--	11,772 (14,837)	10,117 (8,924)	11,350 (12,149)
Retirement	25,264 (26,265)	6,113 (2,158)	22,430 (22,585)	18,379 (19,642)	26,332 (27,253)
Interest	1,784 (7,389)	2,204 (9,118)	1,680 (6,783)	2,119 (9,000)	1,775 (7,345)
Dividends	3,567 (10,771)	4,436 (3,952)	3,144 (10,540)	3,600 (10,961)	3,615 (10,801)
Rent	7,704 (14,790)	1,006 (1,000)	4,375 (6,392)	6,400 (15,620)	8,426 (15,661)
Educational assistance	7,777 (8,642)	5,000 (0)	4,441 (4,392)	8,214 (7,450)	8,187 (9,062)
Other, not specified	2,989 (6,821)	--	1,433 (2,764)	2,584 (4,513)	3,274 (7,332)

Source: Current Population Survey, Annual Social and Economic Supplement 2013-2017. Note: Numbers represent the mean value (in dollars); numbers in parentheses are standard deviations. All numbers were rounded to the nearest dollar. *All mean values presented in this table only account for those who reported income greater than \$0. * For Non-Farm Business Income and Farm Business Income, the means presented are not accounting for those who reported a loss in income. In Pennsylvania in 2017, 112,693 individuals reported an average loss of \$6,219 (SD=4,101) in non-farm business income. Non-Metropolitan native-born individuals reported an average loss of \$6,104 (SD=2,715). In Metropolitan areas, foreign-born individuals reported an average loss of \$8,350 (SD=2,351) and native-born individuals reported an average loss of \$6,276 (SD=4,166). This same year, 69,863 individuals reported an average loss of \$826 (SD=1,657) in farm business income. Non-metropolitan native-born individuals reported an average loss of \$226 (SD=556), while metropolitan native-born individuals reported an average loss of \$960 (SD=1,730). These statistics only include those who reported incomes less than \$0 for the aforementioned categories.

A final important consideration when looking at income profiles is the rate of business ownership among the Pennsylvania adult population. Figure 4 shows the rates of business ownership by nativity groups. Business ownership was determined by whether individuals

reported non-zero (either positive or negative) business earnings and noted themselves as self-employed. In Pennsylvania as a whole, just under 10 percent of individuals own a business by this definition. Most notable about these figures is that the rate of business ownership among foreign-born individuals in both rural and urban areas (12.3% and 11.9%) is higher than among their native-born counterparts (9.8% and 9.3%).

Figure 4. Rates of Business Ownership by Nativity, American Community Survey 2016



Changes in the Economic and Demographic Profile of the Foreign-Born Workforce

As discussed above, the foreign-born share of the workforce in Pennsylvania has increased considerably within the past two decades, from 6.3 to 8.4 percent. On an absolute basis, these increases have been concentrated more in urban areas (4.4 percentage point increase between 2000 and 2016) than rural areas (1.5 percentage point increase between 2000 and 2016). A comparison of maps showing the foreign-born share of the workforce by PUMA for 2010 (Figure 5) and 2000 (Figure 6) with the most recent figures (Figure 2) suggests that within rural

and urban areas, most of the growth in the foreign-born share of the workforce has occurred in and around places with substantial shares of foreign-born individuals in the workforce at the baseline. Very few of the primary-rural PUMAs in the central and western part of the state saw appreciable increases, with the exception of two rural PUMAs in the south-central region of the state, which crossed the threshold of 2.5 percent foreign-born by 2016. For reference, Figure A4 in the appendix maps the percentage-point change in the foreign-born share of the workforce between 2000 and 2016.

Figure 5. Foreign-Born Share of the Workforce by Pennsylvania PUMA, 2010

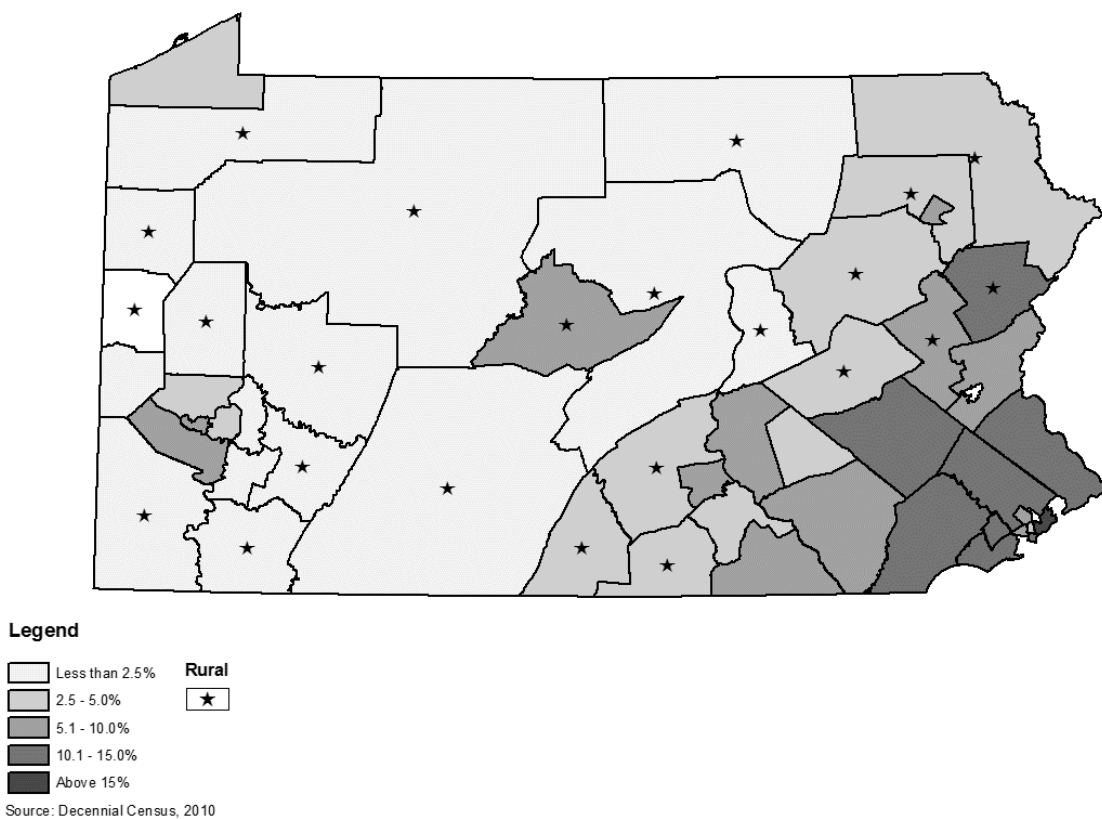
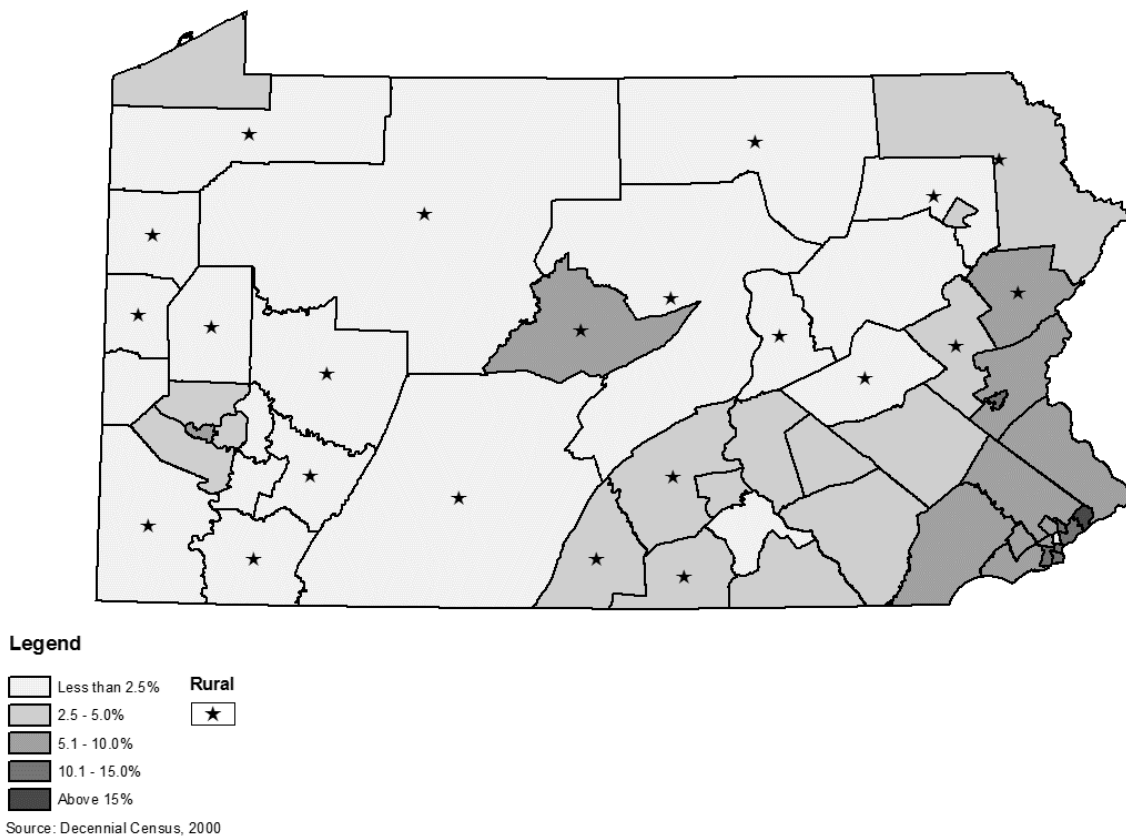


Figure 6. Foreign-Born Share of the Workforce by Pennsylvania PUMA, 2000



Although the foreign-born share of rural Pennsylvania's workforce increased just 1.5 percentage points between 2000 and 2016, this represents a full 75 percent increase over the 2000 baseline. These increases in the overall foreign-born share of the rural workforce may have also corresponded to major changes in the social and economic characteristics of this population if, for example, they were driven by new streams of immigrants. These trends are examined below by producing profiles of the socioeconomic characteristics, and industries and occupations of employment for the foreign-born workforce in 2000 and 2010, which run parallel to the analyses of the 2016 data described above. Key changes that occurred between 2000 and 2016 are highlighted below, emphasizing trends over this full 16-year period, but noting where differences in the respective changes over the 2000-2010 and 2010-2016 periods were

substantively important. From 2000 to 2016, foreign-born employment in the labor force has increased in both rural (60% to 62%) and urban (66.1% to 69.7%) areas. Although the rural foreign-born population has the highest percentage of those not in the labor force (33.4%) compared to all other groups, this rate has decreased from 37 percent in 2000. One of the most notable changes over time, however, is that unemployment rates for all Pennsylvanians has decreased between 2010 to 2016, from 6.6 to 3.8 percent. Immigrants in urban areas had the highest unemployment rate (6.9%) of all groups in 2010, but the lowest rate (3.6%) in 2016.

First, changes in the socioeconomic characteristics of the rural foreign-born workforce are examined. Tables 8 and 9 respectively describe the profile of the rural foreign-born workforce and other reference groups for 2010 and 2000, which can be directly compared to the profiles for 2016 shown in Table 1. A number of notable changes over this period are observed. For one, members of the rural foreign-born workforce have become somewhat more likely to be male and single, with the share of males increasing by 1.5 percentage points—from 46.9 percent in 2000 to 48.4 percent in 2016—and the share married declining by nearly 9 percentage points—from 69.2 percent in 2000 to 60.6 percent in 2016. The increasing foreign-born share of the workforce has been associated with changes in the ethnic and racial composition of this population as well. The representation of non-Hispanic white and Asian individuals among the rural foreign-born workforce has fallen between 2000 and 2016, from 46.2 to 27.6 percent and from 29.3 to 26.8 percent, respectively. In contrast, the representation of Hispanic and non-Hispanic black populations has increased. The Hispanic share of this population has more than doubled from 2000 to 2016, from 16.3 to 36.1 percent; while the non-Hispanic black share has increased by more than 90 percent, from 4.2 to 8.1 percent.

The educational and economic attainment of the rural foreign-born population has also changed in important ways. The share of this population with less than a high school education has increased from 15.0 percent in 2000 to 20.3 percent in 2016, and this has corresponded to declines in the share who have completed high school (32.3% to 30.2%) and who have completed at least a bachelor's degree (35.5% to 30.7%). A modest, 1.6 percentage-point increase in the share of the rural foreign-born workforce who has completed 1-3 years of college is observed. Consistent with the overall shift toward lower levels of educational attainment, the share of the rural foreign-born who live in families below the poverty line has increased from 14.7 percent in 2000 to 21.1 percent in 2016. The share in deep poverty—with incomes of less than half the official federal poverty thresholds—has increased somewhat less, from 8.3 to 11.0 percent. Notably, much of this increase in poverty took place after 2010: from 2000 to 2010, the share of the rural foreign-born workforce in poverty increased just 2 percentage points (to 16.7%), with a 4.4 percentage-point increase in the 6 years from 2010 to 2016. Similarly, the share of this population in deep poverty declined slightly from 8.3 to 7.2 percent between 2000 and 2010 before increasing to 11.0 percent in 2016.

Despite some evidence that the foreign-born workforce in rural Pennsylvania is increasingly disadvantaged socioeconomically—which one might expect to be correlated with increases in the share of poorly integrated new arrivals to the United States—a growing share of this population has resided in the United States for substantial periods of time. In 2000, 24.3 percent of the rural foreign-born workforce had resided in the United States for just 0 to 5 years, but this figure declined to 20.9 percent by 2016. This decline was largely offset by increases in the share of the population residing in the country for 11 to 15 years (12.3% in 2000 to 13.8% in 2016) or 16 to 20 years (10.2% in 2000 to 14.4% in 2016). While the data used in this analysis

do not track individuals' specific places of residence over this period, the observed shifts are consistent with a pattern whereby new arrivals in 2000 remained in rural Pennsylvania through 2016. Consistent with these changes, an increase in the representation of U.S. citizens among the rural foreign-born workforce is also found. In 2000, 45.9 percent of this population were U.S. citizens, but, by 2016, this share was a full 53.2 percent.

Taken together, the patterns noted above suggest that many of the foreign-born adults who initially settle in rural Pennsylvania seek to remain and integrate in their communities of residence. However, these patterns are only partially consistent with the trends in the socioeconomic profile of the rural foreign-born population (see above), and are also not strongly supported by changes in English language skills/use. Specifically, the data show modest but notable changes in English language skills among this population. While approximately 28.0 percent of the foreign-born workforce spoke only English in 2000, this share declined to 21.2 percent in 2016. However, the share of this population who spoke no English increased by only 1.3 percentage points over this period (from 2.5% to 3.8%), with the implication that the decline in English-only speakers was largely offset by increases in the share of individuals speaking both English and another language.

Table 9. Socioeconomic Profile of Pennsylvania Workforce, 2010
Percentages, *Means*, and (Standard Deviations)

	PA	Rural		Urban	
	Total	Foreign-born	Native-born	Foreign-born	Native-born
Sex					
Male	49.1	49.9	50.3	50.4	48.4
Female	50.9	50.2	49.8	49.6	51.6
Age	40.6 (14.0)	40.8 (1.7)	41.2 (14.2)	39.7 (12.4)	40.3 (14.1)
Marital Status					
Married	50.2	62.3	53.0	62.2	47.5
Separated/Divorced	12.4	10.1	13.6	8.3	12.2
Widowed	1.8	1.5	1.9	1.8	1.7
Single/Never Married	35.7	26.1	31.6	27.7	38.7
Family Size	3.0 (1.5)	3.1 (1.6)	3.0 (1.5)	3.5 (1.8)	3.0 (1.5)
Race/Ethnicity					
Non-Hispanic White	80.1	34.6	95.0	24.8	78.6
Non-Hispanic Black	10.2	10.0	2.2	12.2	14.1
Hispanic	5.4	27.3	1.6	24.3	5.1
Asian/Pacific Islander	3.0	26.8	0.2	35.9	0.8
Other	1.4	1.3	1.0	2.7	1.4
Educational Attainment					
Less than High School	11.6	24.3	11.7	18.6	10.9
High School	40.5	31.5	47.1	29.1	38.4
1-3 years of college	21.2	17.7	21.8	15.0	21.5
Bachelor's degree+	26.7	36.5	19.4	37.3	29.2
Poverty Status					
Non-Poor	87.5	93.3	37.0	85.2	88.0
Poor	12.6	16.7	13.0	14.9	12.0
Deep Poverty	5.8	7.2	5.4	6.9	5.9
Employment Status					
Employed, in labor force	68.0	63.8	66.5	69.0	69.2
Unemployed, in labor force	6.6	6.3	6.3	6.9	6.8
Not in labor force	25.4	29.9	27.2	24.1	24.0
Years of Residence in US					
Not Applicable	91.2	--	99.3	--	97.6
0-5 years	1.6	18.2	0.04	21.1	0.2
6-10 years	1.6	19.1	0.1	20.6	0.2
11-15 years	1.3	13.2	0.04	17.1	0.3
16-20 years	1.2	10.9	0.1	13.2	0.4
21 or more years	3.1	38.6	0.5	28.1	1.3

Table 9 (continued). Socioeconomic Profile of Pennsylvania Workforce, 2010
Percentages, *Means*, and (Standard Deviations)

	PA	Rural		Urban	
	Total	Foreign-born	Native-born	Foreign-born	Native-born
Citizenship Status					
Native or born abroad of US parents	91.7	--	100.0	--	100.0
Naturalized Citizen	3.6	43.0	--	44.1	--
Not a Citizen	4.6	57.0	--	47.2	--
English-Language Skills					
Does not speak English	0.5	4.3	0.0	5.8	0.1
Speaks English, but not well	1.7	9.9	0.1	16.8	0.5
Speaks English well/very well	9.1	57.9	2.7	58.1	5.6
Only speaks English	88.7	28.0	97.2	19.2	93.8

Source: American Community Survey, 2016 1-year estimates. Note: Numbers in italics are mean values; numbers in parentheses are standard deviations of the mean; all numbers rounded to the nearest tenth. *When evaluating years or residence in the United States, individuals who were born abroad to U.S. parents were all recoded as "Not applicable."

Table 10. Socioeconomic Profile of Pennsylvania Workforce, 2000
Percentages, *Means*, and (Standard Deviations)

	PA	Rural		Urban	
	Total	Foreign-born	Native-born	Foreign-born	Native-born
Sex					
Male	48.8	46.9	49.7	49.4	48.4
Female	51.2	53.1	50.3	50.6	51.6
Age	39.3 (13.1)	39.8 (12.9)	39.7 (13.3)	39.2 (12.6)	39.2 (13.1)
Marital Status					
Married	56.3	69.2	60.6	64.1	53.7
Separated/Divorced	11.8	8.2	11.6	8.9	12.1
Widowed	2.0	1.7	2.0	2.2	2.0
Single/Never Married	29.9	20.9	25.8	24.8	32.2
Family Size	3.1 (1.5)	3.1 (1.7)	3.0 (1.4)	3.3 (1.7)	3.0 (1.5)
Race/Ethnicity					
Non-Hispanic White	84.9	46.2	97.1	36.1	83.1
Non-Hispanic Black	9.0	4.2	1.4	9.5	12.4
Hispanic	3.1	16.3	0.7	14.6	3.3
Asian/Pacific Islander	2.0	29.3	0.1	35.0	2.0
Other	1.1	4.0	0.7	4.8	1.0
Educational Attainment					
Less than High School	13.7	15.0	14.3	18.5	15.1
High School	44.9	32.3	51.8	31.5	42.7
1-3 years of college	18.7	17.2	18.0	15.1	19.2
Bachelor's degree+	22.8	35.5	15.8	34.9	25.0

Table 10 (continued). Socioeconomic Profile of Pennsylvania Workforce, 2000
Percentages, *Means*, and (Standard Deviations)

	PA	Rural		Urban	
	Total	Foreign-born	Native-born	Foreign-born	Native-born
Poverty Status					
Non-Poor	90.3	85.3	89.6	85.1	91.0
Poor	9.7	14.7	10.4	14.9	9.0
Deep Poverty	4.7	8.3	4.6	8.4	4.5
Employment Status					
Employed, in labor force	70.2	60.0	68.5	66.1	71.7
Unemployed, in labor force	4.0	3.0	3.9	3.9	4.1
Not in labor force	25.8	37.0	27.6	30.0	24.2
Years of Residence in US					
Not Applicable	93.2	--	99.4	--	97.9
0-5 years	1.4	24.3	0.03	23.1	0.2
6-10 years	1.1	13.1	0.04	19.0	0.2
11-15 years	1.0	12.3	0.04	16.5	0.3
16-20 years	0.9	10.2	0.04	13.7	0.2
21 or more years	2.5	40.1	0.5	27.7	1.2
Citizenship Status					
Native or born abroad of US parents	95.0	--	100.0	--	100.0
Naturalized Citizen	2.3	45.9	--	46.6	--
Not a Citizen	2.7	54.1	--	53.5	--
English-Language Skills					
Does not speak English	0.3	2.5	0.0	3.6	0.1
Speaks English, but not well	1.2	8.3	0.3	14.6	0.6
Speaks English well/very well	7.2	58.2	2.7	59.7	5.1
Only speaks English	88.7	28.0	97.2	19.2	93.8

Source: American Community Survey, 2016 1-year estimates. Note: Numbers in italics are mean values; numbers in parentheses are standard deviations of the mean; all numbers rounded to the nearest tenth. *When evaluating years or residence in the United States, individuals who were born abroad to U.S. parents were all recoded as "Not applicable."

Next, the changes in the distribution of the foreign-born workforce across industries are considered. Tables 9 and 10 display the share of this population and reference groups across each industrial category for 2010 and 2000, respectively, and these figures can be compared directly with Table 2. The findings suggest that changes in the industry of employment among the rural foreign-born have been largely concentrated within a limited subset of industries. The largest increases have occurred in transportation, personal services, finance, insurance and real estate, and business and repair services. In 2000, the share of the rural foreign-born workforce

employed in transportation was 2.9 percent, and this increased by a full 4.1 percentage points to 7.0 percent in 2016. Much of this increase occurred between 2010 and 2016, when the share of this population in transportation increased from 3.3 to 7.0 percent. A comparable 2.7 percentage-point increase was observed in personal services, with an uptick in the share of rural foreign-born workers employed in this sector from 3.7 to 6.4 percent between 2000 and 2016 (with most change again occurring between 2010 and 2016). The increases in the other two industries highlighted above—finance, insurance and real estate, and business and repair services—between 2000 and 2016 were 1.5 and 1.0 percentage points, respectively.

Table 11. Distribution of Pennsylvania Workforce by Industry, 2010
Percentages

	PA	Rural		Urban	
	Total	Foreign-born	Native-born	Foreign-born	Native-born
Agriculture Forestry and Fisheries	1.4	2.3	1.8	2.0	1.2
Mining	0.4	0.6	1.0	0.1	0.1
Construction	5.5	3.9	6.3	4.4	5.3
Manufacturing	10.9	12.8	12.2	12.7	10.1
Transportation	3.5	3.3	3.9	3.1	3.3
Communications	0.9	0.2	0.7	0.7	1.0
Utilities and sanitary services	1.0	0.5	1.3	0.4	1.0
Wholesale Trade	2.4	4.2	2.3	2.1	2.4
Retail Trade	15.6	14.5	16.3	14.9	15.3
Finance Insurance and Real Estate	5.0	2.9	3.3	3.9	5.9
Business and Repair Services	5.0	7.1	3.9	7.8	5.2
Personal Services	2.5	4.1	2.4	5.4	2.3
Entertainment and Recreation Services	1.3	0.8	1.3	0.3	1.5
Professional and Related Services	26.0	24.6	24.1	24.2	27.1
Public Administration	3.5	0.9	4.1	1.5	3.4
Experienced Unemployed Not Classified by Industry	1.1	0.9	0.9	1.9	1.2
Has not worked in 5+ years	14.1	16.6	14.3	14.7	13.9
Total	100.0	100.0	100.0	100.0	100.0

Source: American Community Survey, 2010 1-year estimates. Note: All numbers are percentages; all numbers rounded to the nearest tenth.

Offsetting the growing share of foreign-born workers in the above mentioned industries, the likelihood that members of the rural foreign-born workforce were employed in professional and related services or manufacturing declined considerably between 2000 and 2016. In 2000, 27.6 percent of this population was employed in professional and related services, but this declined 5.6 percentage points—to 22.1 percent—by 2016. The share of this population employed in manufacturing declined from 15.0 percent to 12.0 percent over the same period. In both cases, the majority of these declines occurred between 2000 and 2010: by 2010, the shares of the rural foreign-born workforce that were employed in professional and related services and manufacturing had already fallen to 24.6 and 12.8 percent, respectively.

Table 12. Distribution of Pennsylvania Workforce by Industry, 2000
Percentages

	PA	Rural		Urban	
	Total	Foreign-born	Native-born	Foreign-born	Native-born
Agriculture Forestry and Fisheries	1.4	2.4	2.0	1.6	1.1
Mining	0.3	0.2	0.7	0.04	0.1
Construction	5.3	2.4	6.1	3.4	5.1
Manufacturing	14.7	15.0	17.2	16.0	13.4
Transportation	3.9	2.9	4.1	2.4	3.9
Communications	1.1	0.9	0.8	0.7	1.2
Utilities and sanitary services	1.1	0.3	1.1	0.5	1.1
Wholesale Trade	2.9	2.0	2.6	2.4	3.1
Retail Trade	16.0	16.0	16.4	16.1	15.8
Finance Insurance and Real Estate	5.3	2.4	3.6	4.5	6.2
Business and Repair Services	4.9	3.8	3.6	5.5	5.4
Personal Services	2.4	3.7	2.5	4.5	2.3
Entertainment and Recreation Services	1.1	0.6	1.0	0.6	1.2
Professional and Related Services	23.5	27.6	21.1	23.2	24.6
Public Administration	3.6	2.0	3.6	1.8	3.7
Experienced Unemployed Not Classified by Industry	0.5	0.4	0.4	0.7	0.5
Has not worked in 5+ years	12.2	17.5	13.4	16.1	11.4
Total	100.0	100.0	100.0	100.0	100.0

Source: Decennial Census, 2000. Note: All numbers are percentages; all numbers rounded to the nearest tenth.

Finally, changes in the representation of the rural foreign-born within industrial categories were considered. That is, this analysis tracks changes in the share of all workers within each industry that are foreign-born and reside in rural areas, an indicator of the degree to which that industry relies upon this particular sub-population. Here again, it is important to remember that the rural and urban foreign-born members of the workforce represented 2.0 and 6.3 percent of Pennsylvania's total population in 2000, respectively, and grew to represent 3.5 and 10.7 percent of the total 2016 population. Tables 13 and 14 present the distribution of the industry-specific workforce according to nativity and residence in rural or urban areas for 2010 and 2000, respectively. These figures can be compared directly with the statistics for 2016 in Table 3. Consistent with the overall increase in the rural, foreign-born share of Pennsylvania's workforce over this period, we observe increasing representation of this population across all of the industrial categories considered in our analysis. Within none of these categories was a decrease in the rural foreign-born share of the industry-specific workforce observed.

With that said, the increasing representation of the rural foreign-born population was uneven across industries. Here, it is important to keep in mind that the rural foreign-born share of the entire workforce in Pennsylvania increased by 1.5 percentage points between 2000 and 2016. In absolute terms, the largest increases were observed in personal services and transportation. Between 2000 and 2016, the share of the workforce in the personal services sector that was rural and foreign-born increased 1.6 percentage points, from 0.9 to 2.5 percent. A comparably large increase of 1.5 percentage points occurred in transportation, where the share of rural foreign-born workers increased from 0.4 to 1.9 percent. Notable increases of 0.6 and 0.7 percentage points also occurred in communications (0.5% in 2000 to 1.2% in 2016) and manufacturing (0.6% to 1.2%), respectively. Absolute increases in the representation of the rural foreign-born

population across other industry-specific populations were generally smaller, at or above 0.5 percentage points.

Table 13. Distribution of Industry-Specific Workforce by Nativity and Rural/Urban Residence, 2010
Percentages

	Rural		Urban	
	Foreign-born	Native-born	Foreign-born	Native-born
Agriculture, forestry and fisheries	1.4	39.3	8.4	50.9
Mining	1.2	79.2	0.9	18.7
Construction	0.6	35.8	4.9	58.6
Manufacturing	1.1	35.0	7.2	56.8
Transportation	0.9	35.5	5.6	58.1
Communications	0.2	23.8	5.3	70.7
Utilities and sanitary services	0.4	39.3	2.41	57.9
Wholesale trade	1.6	30.0	5.5	62.9
Retail trade	0.8	32.9	5.9	60.4
Finance insurance and real estate	0.5	21.1	4.8	73.6
Business and repair services	1.3	24.7	9.6	64.4
Personal services	1.5	30.0	13.2	55.4
Entertainment and recreation services	0.5	30.4	1.5	67.6
Professional and related services	0.9	29.2	5.7	64.2
Public administration	0.2	36.6	2.6	60.5
Experienced unemployed not classified by industry	0.7	24.5	10.4	64.4
Has not worked in 5+ years	1.1	31.8	6.4	60.7

Source: American Community Survey, 2010 1-year estimates. Note: All numbers are percentages; all numbers rounded to the nearest tenth.

Table 14. Distribution of Industry-Specific Workforce by Nativity and Rural/Urban Residence, 2000

Percentages

	Rural		Urban	
	Foreign-born	Native-born	Foreign-born	Native-born
Agriculture, forestry and fisheries	1.0	41.6	5.1	52.3
Mining	0.4	73.9	0.6	25.1
Construction	0.3	33.8	2.8	63.2
Manufacturing	0.6	34.5	4.8	60.1
Transportation	0.4	30.6	2.8	66.2
Communications	0.5	22.3	2.7	74.5
Utilities and sanitary services	0.2	30.3	2.0	67.6
Wholesale trade	0.4	26.1	3.6	69.9
Retail trade	0.6	30.1	4.5	64.8
Finance insurance and real estate	0.3	19.9	3.8	76.1
Business and repair services	0.5	21.7	5.0	72.8
Personal services	0.9	29.7	8.2	61.2
Entertainment and recreation services	0.3	26.8	2.6	70.2
Professional and related services	0.7	26.3	4.4	68.6
Public administration	0.3	30.0	2.2	67.4
Experienced unemployed not classified by industry	0.6	23.9	6.5	69.0
Has not worked in 5+ years	0.8	32.4	5.8	61.0

Source: American Community Survey, 2010 1-year estimates. Note: All numbers are percentages; all numbers rounded to the nearest tenth.

Conclusions

This research analyzed the representation of foreign-born adults in rural Pennsylvania's workforce, studied their socioeconomic characteristics and position in the labor market, and identified salient trends in these outcomes over time. The results highlight a number of important trends.

First, the analysis shows that the foreign-born represent a modest but increasing share of the workforce in rural Pennsylvania. In 2016, 3.5 percent of rural Pennsylvania's workforce was foreign-born, which represents a 1.5 percentage-point increase over 2000. The foreign-born share of the workforce in rural areas of the Commonwealth is considerably smaller than in urban

Pennsylvania, where, in 2016, 10.7 percent of the workforce was foreign-born. The representation of foreign-born individuals in the workforce is also spatially uneven within rural parts of the state. In only three of the 23 rural PUMAs in the state did the foreign-born share of the workforce exceed 6 percent in 2016, and in only three others did the foreign-born share of the workforce fall between 4 and 6 percent. Many of these rural PUMAs—including the three with the highest foreign-born share of the workforce—are areas with colleges and universities, which may attract foreign-born students and faculty members. The implication is that the foreign-born share of the workforce falls below the rural Pennsylvania-wide average of 2.5 percent in the vast majority of rural PUMAs. The exceptions to this pattern are likely explained by unique immigration dynamics around colleges and universities, which represent unique economic contexts relative to other rural communities in the commonwealth. With that said, comparable patterns are generally observed when students are excluded from the analytic sample, which may point to the broader impact of colleges and universities on local economies.⁹

Second, the socioeconomic characteristics of the rural foreign-born workforce paint a somewhat ambiguous portrait of immigrant integration—at least as measured by the indicators included in this study—in rural areas of Pennsylvania. On the one hand, members of this population are more likely to have completed at least a bachelor’s degree than their native-born rural peers. In 2016, nearly one-third (30.7%) of foreign-born members of the rural workforce had completed a bachelor’s degree or more, and this was nearly 9 percentage points higher than among native-born members of the rural workforce (22.0%). As another positive indicator of immigrant integration, very small shares of the rural foreign-born population speak no English

⁹ When students were excluded, Centre PUMA (home to Pennsylvania State University) was impacted; however, similar patterns of the percent of foreign-born individuals in the workforce can be seen across the rest of the PUMAs. In Centre PUMA, the percent of foreign-born decreased from 8.1 percent to 5 percent. See Appendix.

(3.8% in 2016), and this percentage is smaller than what was observed among the foreign-born urban workforce (5.1% in 2016). Likewise, in 2016, 83.6 percent of the rural foreign-born workforce spoke English well, very well, or exclusively. On the other hand, there is evidence to suggest that these characteristics are not translating into positive economic outcomes, or that such outcomes are only limited to a subset of the rural foreign-born population. For example, this population is characterized by high rates of poverty, with 21.1 percent living in families below the poverty line—and 11.0 percent in families with income below 50 percent of the poverty line—in 2016.

The analysis of trends since 2000 also points to challenges regarding immigrant integration. In particular, it reveals evidence of increasing poverty rates and declines in educational attainment and English language skills among rural foreign-born adults. Since 2000, the share of rural foreign-born who are poor increased by 6.4 percentage points (14.7% to 21.1%); the share with less than a high school degree increased by 5.3 percentage points (15.0% to 20.3%), and the share who speak no English increased by 1.3 percentage points (2.5% to 3.8%). These trends suggest a growing need for interventions that improve economic wellbeing and promote language skills and educational attainment.

Third, the data show that foreign-born workers are distributed unevenly across industries. Among foreign-born workers in rural parts of Pennsylvania, more than one fifth are employed in professional and related services (22.1%), and more than 10 percent are employed in retail trade (16.8%) and manufacturing (12.0%). Interestingly, with reference to native-born rural workers the foreign-born are under-represented in mining (0.3% vs. 0.9%), construction (2.0% vs. 5.8%) and public administration (2.1% vs. 3.9%), and over-represented in personal services (6.4% vs. 2.3%) and transportation (7.0% vs. 4.1%). A similar but distinct analysis shows that among the

population of Pennsylvanian workers within each industry, the rural foreign-born constituted the largest shares in the personal services (2.5%), transportation (1.9%), and agriculture, forestry and fisheries (1.4%) industries.

Fourth, the results of the analysis of income analysis from both the American Community Survey and Current Population Survey yield similarities in sources of income between foreign- and native-born Pennsylvanians living in both rural and urban places. For example, for both the ACS and CPS, wage and salary income was by far the most common type of income received among all groups. Furthermore, both datasets demonstrate that interest income and Social Security receipt is not uncommon, while other forms of income, such as welfare and retirement, are far less common. Looking at both the ACS and CPS data, patterns are consistent across the datasets when it comes to income sources such as interest and retirement. In both cases, rural and urban immigrants show a slightly higher average of interest income, and meaningfully lower retirement income. Some differences in the patterns for income between the ACS and CPS do emerge. For example, the ACS data suggest that rural native-born individuals reported slightly higher wage and salary income than their immigrant counterparts, whereas the CPS data for rural adults suggest a slight foreign-born advantage in this regard. Since the CPS forces a different definition of “rural” (i.e., non-metropolitan) than the research definition of rural using the ACS, comparisons between the results need to be interpreted with caution.

Regarding average amounts of personal income received there is rough similarity, although small sample sizes suggest the need to be cautious in drawing conclusions. What differences do emerge are complex and do not align neatly with any particular narrative of U.S. immigration, whether positive or negative. For example, in metro areas the foreign-born are less likely to report earnings, but also less likely to receive transfer payments from TANF and SSI.

The rural foreign-born do not differ from the rural native-born in their prevalence of earnings, but their earnings are decidedly greater. They also are especially likely to receive unemployment benefits relative to the rural native-born or urban residents generally. This may suggest a clustering in industries more susceptible to market changes, a possibility that is contradicted by their higher earnings. An implication is that the rural foreign-born population is diverse and is comprised of advantaged and vulnerable subpopulations. The rural foreign-born also appear to be older, as evidenced by their higher receipt of retirement income.

Lessons and Implications From National-Level Research

The movement of immigrant groups, Hispanics in particular, to rural and small-town America is not unprecedented, but has seen a marked increase that has captured the attention of researchers and policymakers (Johnson and Lichter, 2016). Whether this movement to rural places is a help or hindrance for these localities depends on the employment and other circumstances of new arrivals, and whether and how they become integrated into communities. It could be that new immigrants provide youthful vitality in communities that may otherwise be in decline due to population aging and youth out-migration, or that they place undue stress on schools, social support systems, and local infrastructures, or some combination of both (Carr, Lichter, and Kafalas, 2012). Whether the movement of immigrants to small communities is a bane or blessing depends also on contexts of reception and, notably, the inclination of natives to welcome and support newcomers (Jensen, 2006).

National evidence has implications for what may be going on in Pennsylvania. Lichter, Parisi, and Taquino (2016) show a high degree of residential segregation between Hispanics and whites in new rural destinations. That is, they live apart. This is in marked contrast to the pattern

in older and more established Hispanic destinations where residential segregation is lower than other kinds of places. The implication is that, over time, residential integration seems to occur, albeit slowly in the newest Hispanic destinations. Lichter et al. (2016) also show that industrial structure affects these processes, with counties specializing in certain industries (e.g., recreation or retirement counties) having lower segregation between Hispanics and whites. Despite residential segregation, the movement of immigrants to rural places has demonstrably increased the exposure of rural populations to communities that are racially and ethnically diverse (Lichter, Parisi and Taquino, 2018). Further study of the spatial segregation or integration of immigrants and natives in rural Pennsylvania is needed.

The movement of Hispanics to rural and small-town America is consequential. Indeed, Johnson and Lichter (2016:722) conclude that “the growth and dispersion of the Hispanic population is among the most important demographic trends in contemporary America.” Their study shows that the “demographic footprint” of the trend is considerable, owing to the population aging and declining fertility among natives in these places. This, combined with the relatively high fertility among Hispanics in new destination counties (Lichter, Johnson, Turner and Churilla, 2012) underscores the demographic vitality that new immigrant groups can bring. The identification of Pennsylvania locales where these dynamics are occurring, and the concentrated study of these places, could provide clues as to how communities can accommodate and perhaps capitalize on this trend. This understanding may become even more important in the years ahead. Johnson and Lichter (2019) document a rise in rural counties that are depopulating due to net outmigration and natural population decrease (more deaths than births). While this phenomenon tends to befall counties in America's heartland, they identify several in

Pennsylvania that are experiencing depopulation. There is no question that movement of immigrants to new destinations has the capacity to avert population decline.

Some of the historical rhetoric surrounding immigration to the United States has been couched in terms of winners and losers, or the impact of immigrants on those already here, particularly natives who may be economically vulnerable. Crowley, Lichter, and Turner (2015) document declining economic circumstances among Hispanics beginning in 2000, a downturn that was particularly apparent among those in new destination counties. Their study shows, however, that any benefits to Hispanics from settling in new destinations did not come at the expense of African Americans already living in those places. Although the co-residence of Hispanics and African Americans in rural Pennsylvania counties is rare, national studies such as this do suggest the need to better understand the impact of new immigrants on vulnerable natives in rural Pennsylvania. This is particularly so given evidence in this report of lowering socioeconomic status among the foreign-born in rural Pennsylvania.

Policy Considerations

The findings point to a number of potential focus areas for policymakers. First, meaningful shares of the rural foreign-born workforce have low levels of educational attainment (e.g., 20.3% less than high school) and limited English language skills (e.g., 16.4% do not speak English or speak English but not well). While it is possible that some individuals with these characteristics are filling demands for work in what are typically considered low-skilled positions, English language skills and additional education—or alternative forms of vocational training—will be needed for them to experience significant economic mobility into higher-paying positions. Investments in English language training and other forms of adult education

and learning—particularly programs targeted toward foreign-born and non-native-English speakers—are therefore likely to have particularly high returns for this population.

While such interventions are likely to increase earnings and reduce poverty among the rural foreign-born over the long-run, shorter-term efforts to reduce poverty and otherwise mitigate economic hardship among low-skilled foreign-born workers may be needed. Not only is the poverty rate among this population—at 21.1 percent—highest among the four groups considered in this analysis, but foreign-born members of the rural workforce, on average, live in larger families (3.2 persons) than their native-born counterparts (3.0 persons). A possible implication is that dependents—including children—of the foreign-born rural workforce are at greater risk of being exposed to poverty than their native-born counterparts. Efforts to reduce poverty or mitigate its effects can take a variety of forms, including changes to the minimum wage and other wage subsidies, such as earned income tax credits—referred to as “tax forgiveness” in the Commonwealth. Since the latter requires taxpayers to apply for forgiveness (i.e., does not occur automatically), programs to increase the use of this program among the foreign-born—such as through advertisements and providing instructions in Spanish and other commonly-spoken languages—could improve the economic standing of this population even in the absence of changes in eligibility or generosity.

Poverty-reduction and -mitigation efforts could also include expanding program eligibility to ensure foreign-born workers and their families are not excluded, such as by eliminating or reducing the number of years that immigrant adults are required to reside in the U.S. before receiving benefits (which may require changes at the federal level) and/or providing state-level benefits to immigrants during the period they are ineligible for federal supports. Again, there is room for improvement even in the absence of changes to program eligibility or

generosity, including implementing programs to encourage the use of existing programs among the foreign-born. Such efforts may be particularly important among foreign-born adults with children, since in many cases foreign-born children, but not their parents, may be eligible for assistance (e.g., the Supplemental Nutrition Assistance Program). With that said, it is important to recognize that state-level efforts on this front will be affected by actions at the federal level.

The findings also underscore that the rural foreign-born workforce is employed in a diverse set of industries across the Commonwealth. While popular imagination may suggest that this population is disproportionally employed in agriculture and related industries, the results demonstrate that this is not the case. Instead, large shares of the rural foreign-born population are employed in services, manufacturing, and transportation, as well as finance, insurance and real estate. These findings suggest that efforts to improve economic outcomes among foreign-born workers in rural areas should account for the diverse fields in which this population contributes to, either by providing a diverse set of training opportunities or working to improve a generic set of skills that can be applied to facilitate economic mobility within a number of areas.

Additionally, an implication of this analysis of income sources suggests the rural foreign-born population might be rather diverse. Policy needs to be attentive to this complexity—to the different assets, contributions and vulnerabilities of rural immigrants—rather than approach this group as a monolithic whole. For example, if they are indeed more vulnerable to spates of unemployment (as suggested by their higher prevalence of both welfare and unemployment benefit receipt), then skills training programs might be tailored to their particular human capital deficits. Likewise, if, as this income analysis suggests, the rural foreign-born population might be bifurcated and include a relatively privileged group at the top, then they might constitute a

resource to catalyze rural development that would benefit foreign- and native-born rural Pennsylvanians alike.

Finally, it is notable that the rural foreign-born population mirrored the socioeconomic characteristics of the urban foreign-born along many lines. On the one hand, this finding suggests that policy interventions related to the foreign-born workforce may not need to be differentiated for, or specifically targeted toward, the rural and urban populations separately. On the other hand, however, these similarities also raise questions about the rural/urban classification of these populations. It was found that the foreign-born population is largely concentrated in urban PUMAs and urban-adjacent rural PUMAs. Given the large area of many PUMAs, it is difficult to precisely identify the types of communities and local economies in which these individuals are embedded with the data used in this analysis. This observation suggests the need for additional, more spatially-disaggregated analyses and underlines the value of such high-resolution data.

If reduced to a single point for policymakers, the results underscore that the foreign-born population in rural areas is heterogeneous. It includes disproportionate shares of both high- and low-skilled adults, and workers employed in a diverse set of industries across Pennsylvania. This diversity precludes easy generalization, and suggests a need to base social and economic policy related to the immigration population on detailed empirical evidence. The heterogeneity also suggests the need for place-based studies in rural Pennsylvania, anchored around the collection of new primary data, both qualitative and quantitative.

Stakeholder Engagement

Engagement with three advisory board members provided a range of substantive and methodological insights that have assisted the interpretation of results and helped the researchers to identify limitations and avenues for future research. While many of these points have been integrated throughout the report, this concluding section underlines a number of particularly salient observations. With this said, it is important to note that these comments reflect a synthesis of the advisory board members' input and the authors' methodological and substantive knowledge. As such, no point should be attributed to a specific advisory board member or the organizations for which they work.

Advisory board members offered three general observations. First, it was recognized that continued attention to the rural foreign-born population in the Commonwealth is important for researchers, practitioners, and policymakers. While Pennsylvania's urban foreign-born population rightly—given its size—receives the majority of attention from these actors, the rural foreign-born population is non-trivial in size, growing, and is characterized by a unique set of challenges and opportunities that will not always be adequately addressed or capitalized upon by uniform (i.e., place-neutral) statewide policies.

A second and related observation is that it is important to ground assumptions about the rural foreign-born population in empirical facts rather than popular stereotypes. For example, it is commonly assumed that this population is almost exclusively employed in the agricultural sector and disproportionately transient. These results demonstrate that this is not often the case, and underscores the diversity within this population in terms of industry of employment, job-related skills, and duration of residence. On the other hand, advisory board members also cautioned about the need to think critically about how industry-of-employment is categorized—

and in particular the possibility that the statistics in this report underestimate the rural foreign-born population's engagement in the agricultural sector. For example, individuals employed in food packaging and processing may be classified as working in manufacturing, even though they remain tightly linked to agriculture.

Third, another potential blind spot, or limitation, to this study is its emphasis on the characteristics of the workforce only. As such, the analysis misses broader structural questions such as the match (or mismatch) between labor supply and demand. For example, recent popular reporting on Pennsylvania's mushroom industry has highlighted the major challenges that employers in this sector face when trying to fill jobs that have historically been held by foreign-born workers (Benshoff, 2017). The approach taken in this study—which focuses only on the population of workers (and potential workers), not the demand for work—does not capture such dynamics.

Advisory board members emphasized two additional methodological considerations. First, as noted in parts of the report above (and addressed in Figure 3), the inclusion of the foreign-born population in Centre County and other select rural PUMAs with universities may affect some of the observed trends—for example, pushing estimates of educational attainment and English language skills upwards. Indeed, the apparent bifurcation of the rural foreign-born population with respect to education is consistent with such a dynamic. This observation suggests the need to think carefully about diversity among the foreign-born population, and perhaps identify needs and target interventions to certain sub-groups within this population. On the other hand, it can be argued that the unique characteristics of university-affiliated, foreign-born populations do not justify the exclusion of the foreign-born population in Centre County and other similar contexts. Instead, it is important to recognize the needs and contributions of

these highly-skilled immigrants as much as other sub-populations with perhaps lower levels of skill but who also fill important niches in the economy.

Second, and importantly, the use of PUMAs and/or the particular thresholds used to define rural (urban) resulted in the classification of many low-density, agricultural-dependent settlements—that might be considered rural by many observers—as urban. This is particularly true of many places in the south eastern and south central parts of the state. While the definition of “rural” and “urban” is always contested (Isserman, 2005), and these limitations are inherent to the public-use microdata, this observation underlines the need to think critically about how one classifies rural and urban populations. Such concerns are not only relevant for researchers, but also for policymakers who may seek to target certain policies or regulations to rural (non-metropolitan) or urban (metropolitan) populations.

Advisory board members also provided two insights regarding interventions to improve the incorporation of foreign-born adults, particularly those with limited English language skills and lower socioeconomic status. At least two primary areas were emphasized. First, schools play an important role. Although these educational institutions cannot directly improve the socioeconomic status of families, they can work to engage with parents to connect them with resources that will improve their English language abilities and other job-related skills, or provide other forms of assistance. Schools also help determine the outcomes among foreign-born workers’ children, who represent the next generation of workers and taxpayers in Pennsylvania. Particular attention is needed toward English language support in rural schools, where the low density of foreign-born populations (amidst other challenges) means that there are often limited resources to provide the necessary support. On the other hand, the Pennsylvania Department of Education does have expectations that localities offer English language programming for

students that accounts for their unique backgrounds. The challenge will be to make sure that localities prioritize these plans and have the resources to implement them.

Second, there is also a role of education and outreach—broadly defined—to occur outside the formal schooling system, and to be targeted to adults. Even in the absence of major policy reforms—some of which will require action at the federal rather than state level—a number of rather basic, short-term steps—such as providing information about relevant policies and programs in Spanish and other commonly-spoken languages—can have important impacts on the welfare of the foreign-born population. Relatedly, with sufficient support and direction, non-profit organizations and extension workers—whose work extends beyond agriculture into important domains, such as nutrition—can play important roles supporting the integration and socioeconomic mobility of the rural foreign-born population.

Indeed, the results provided in this report underscore the geographic and socioeconomic diversity of Pennsylvania’s foreign-born workforce. Attention to this diversity—and the implementation of correspondingly complex and flexible policies—is needed to improve the welfare of disadvantaged foreign-born populations and to fully capitalize upon the economic potential of this substantial and growing share of the Commonwealth’s workforce.

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Appendix

Figure A1. Comparison of Consistent and Non-Consistent PUMAs, 2016

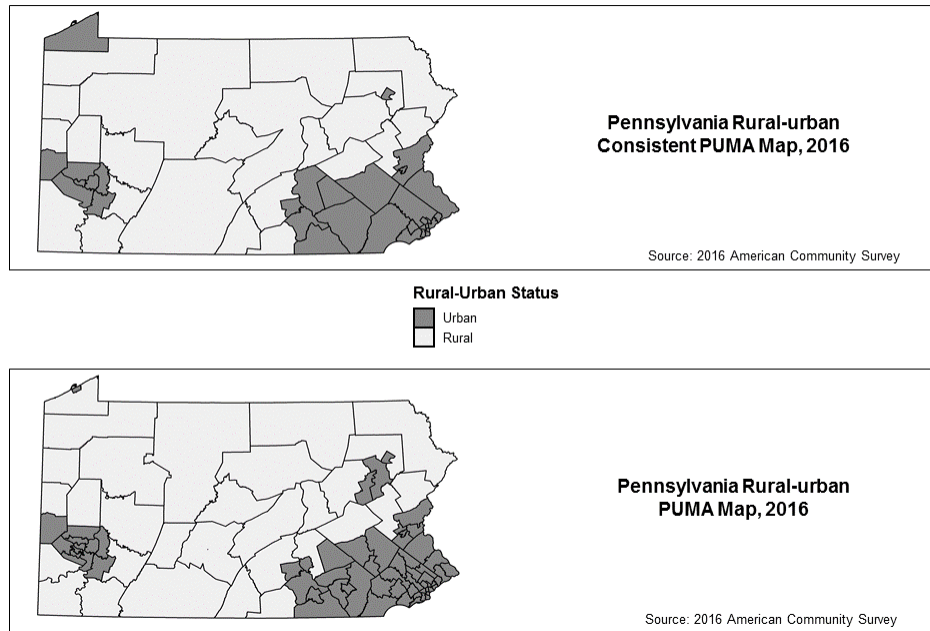


Figure A2. Rural (Urban) Status of Pennsylvania PUMAs, 2010

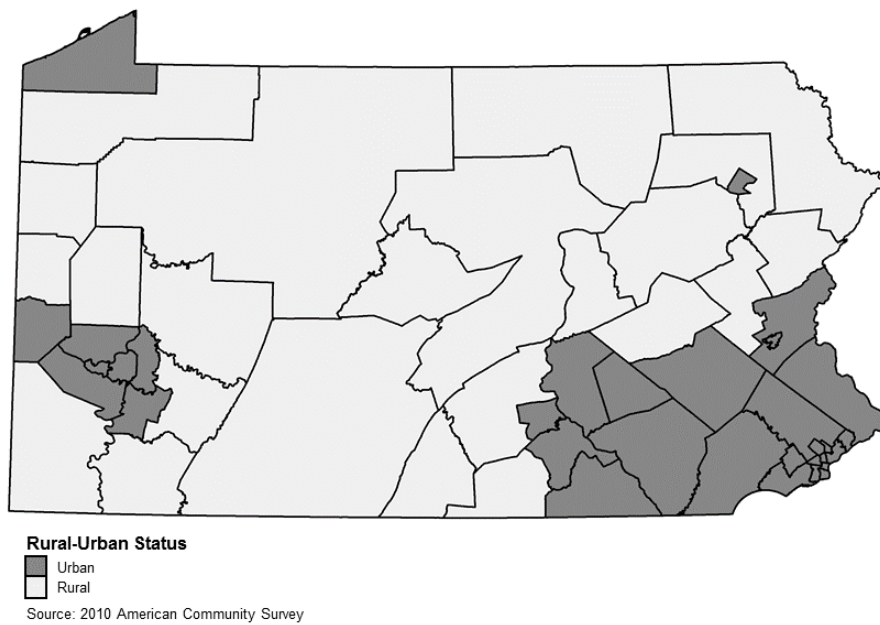


Figure A3. Rural (Urban) Status of Pennsylvania PUMAs, 2000

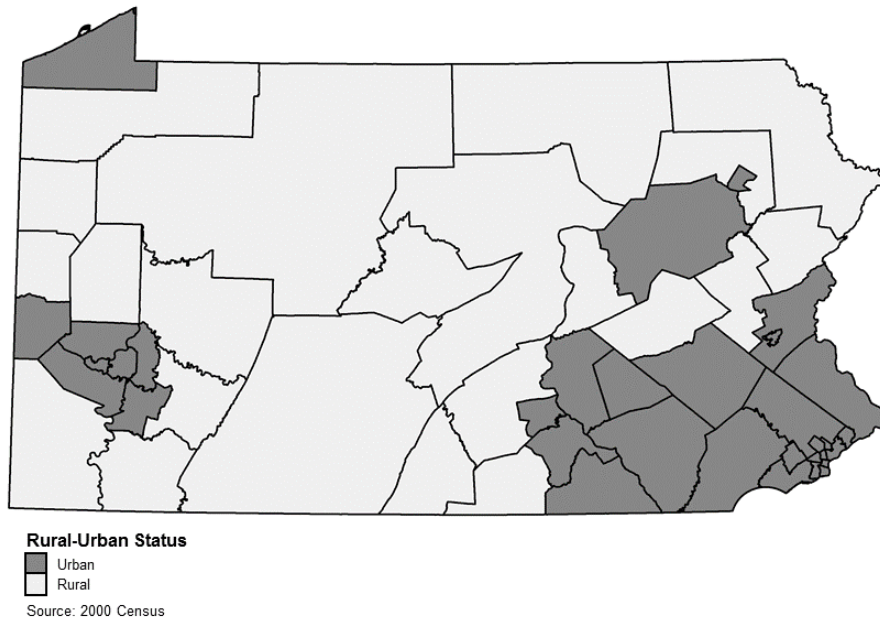


Figure A4. Percentage-Point Change in Foreign-Born Share of the Workforce 2000 to 2016, by PUMA

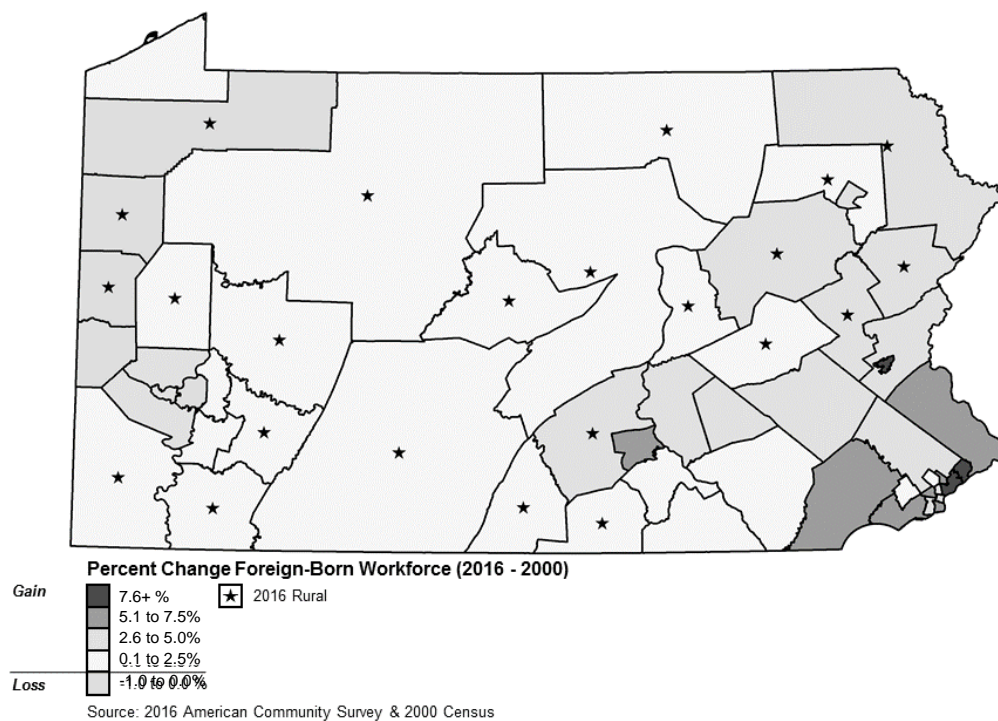
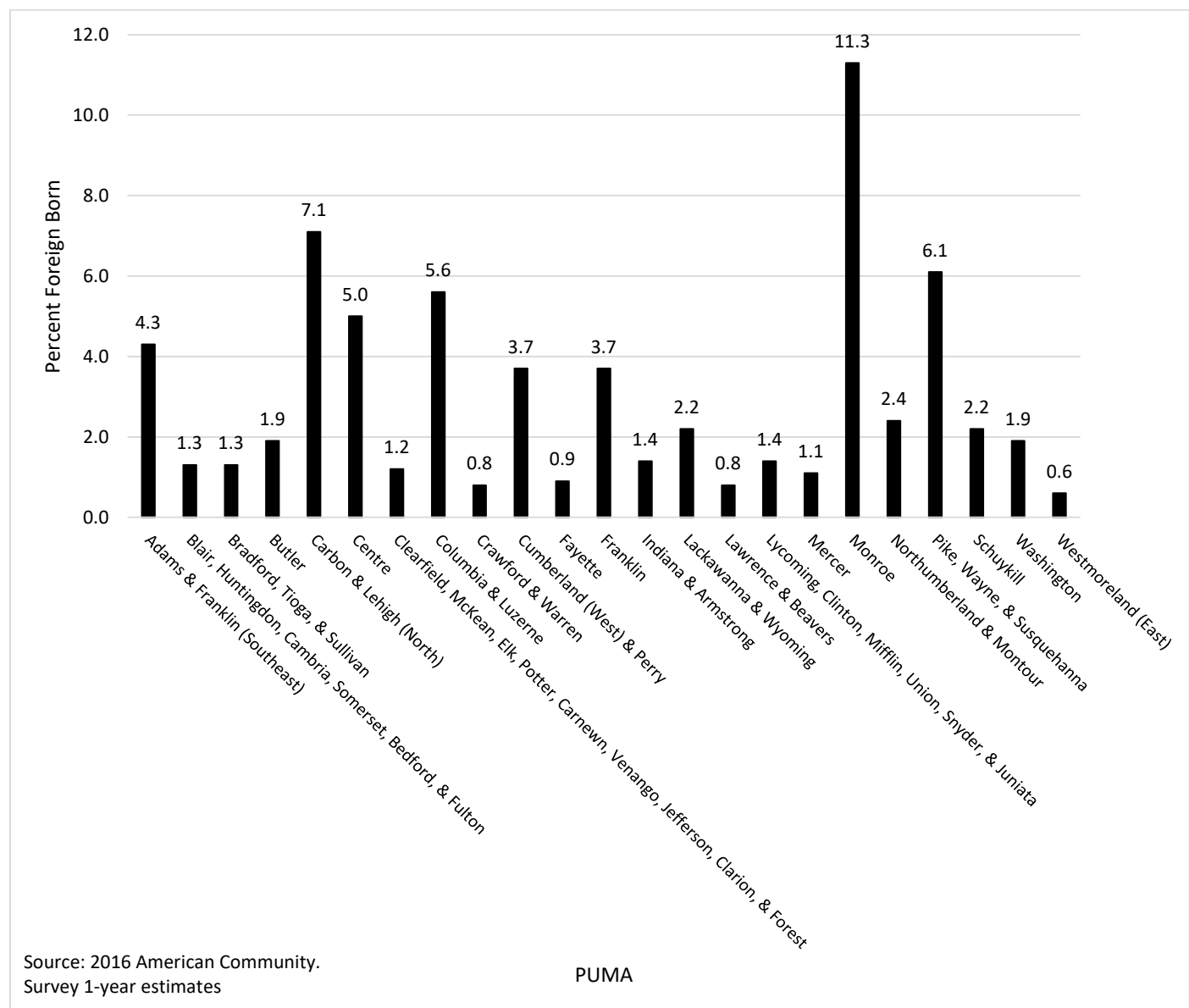


Figure A5. Percent Foreign-Born by PUMA (excluding those enrolled in school)¹⁰



¹⁰ The researchers conducted a supplemental analysis that excludes those who are currently enrolled in school, our best measure of college enrollment (and a reasonable proxy given the age range of our analytic sample). (Inserted after Figure 3). With the exception of Centre PUMA (home to Pennsylvania State University), similar patterns of the percent of foreign-born individuals in the workforce can be seen across PUMAs. The percent foreign-born in Centre dropped from 8.1 percent to 5 percent after excluding those who are currently enrolled in school.

Table A1. Country of Origin of the Foreign-born Workforce, 2016

	PA	Rural	Urban
India	11.2	7.4	11.9
China	8.1	9.0	8.0
Mexico	6.8	10.6	6.1
Dominican Republic	5.6	9.3	4.9
Vietnam	4.8	2.1	5.3
Korea	3.5	2.4	3.8
Philippines	2.5	3.0	2.4
Ukraine	2.3	1.6	2.4
Jamaica	2.2	0.7	2.5
Canada	2.1	3.9	1.7
Other	50.9	50.1	51.2

Source: American Community Survey, 2016.

Note: All percentages are rounded to the nearest tenth. This table shows the top 10 countries of origin that were represented in the 2016 data. There were 143 different countries listed, so remaining countries of origin were grouped into “other.”

Table A2. Country of Origin of the Foreign-Born Workforce, 2010

	PA	Rural	Urban
India	10.3	4.4	11.4
China	6.0	7.0	5.8
Mexico	8.4	12.2	7.7
Dominican Republic	4.5	4.3	4.5
Vietnam	5.4	1.5	6.2
Korea	4.0	4.1	4.0
Philippines	2.7	3.8	2.5
Ukraine	2.4	0.6	2.7
Jamaica	2.0	2.5	1.9
Canada	2.7	3.7	2.5
Other	51.7	56.1	50.83

Source: Decennial Census, 2010.

Note: All percentages are rounded to the nearest tenth. This table shows the top 10 countries of origin that were represented in the 2016 data. There were 137 countries listed, so remaining countries of origin were grouped into “other.”

Table A3. Country of Origin of the Foreign-Born Workforce, 2000

	PA	Rural	Urban
India	8.2	5.8	8.7
China	4.3	3.6	4.5
Mexico	6.1	7.1	5.8
Dominican Republic	2.1	1.5	2.3
Vietnam	5.5	2.4	6.1
Korea	4.3	3.3	4.5
Philippines	2.6	3.0	2.5
Ukraine	2.7	0.4	3.2
Jamaica	2.5	1.3	2.7
Canada	3.3	6.1	2.7
Other	58.5	65.5	57.0

Source: Decennial Census, 2000.

Note: All percentages are rounded to the nearest tenth. This table shows the top 10 countries of origin that were represented in the 2016 data. There were 146 countries listed, so remaining countries of origin were grouped into “other.”

Table A4. Distribution of Occupations of Pennsylvania Workforce by Nativity and Rural/Urban Residence, 2016

Percentages

	PA	Rural		Urban	
	Total	Foreign Born	Native-born	Foreign-born	Native-born
Managerial and professional specialty	13.2	10.2	10.6	10.6	14.8
Professional specialty	14.8	16.4	12.7	15.9	15.6
Social recreation and religious workers	3.3	1.8	2.5	1.8	3.9
Technical sales and administrative support	23.3	21.2	22.6	18.5	24.4
Service	14.4	16.2	14.5	18.0	24.4
Farming, forestry, and fishing	1.5	2.8	2.0	1.9	1.2
Precision production, craft, and repair	8.0	4.4	10.1	6.1	7.4
Operators, fabricators, and laborers	11.0	15.8	14.2	13.7	9.0
Military	0.1	0.3	0.1	0.04	0.1
Experienced unemployed, not classified by occupation	0.6	0.8	0.4	0.9	0.6
Has not worked in 5+ years	9.8	10.2	10.4	12.8	9.2
Total	100.0	100.0	100.0	100.0	100.0

Source: American Community Survey, 2016 1-year estimates.

Note: All numbers are percentages; all numbers rounded to the nearest tenth.

Table A5. Distribution of Occupations of Pennsylvania Workforce by Nativity and Rural/Urban Residence, 2010

Percentages

	PA	Rural		Urban	
	Total	Foreign Born	Native-born	Foreign-born	Native-born
Managerial and professional specialty	10.0	8.21	7.9	9.0	11.2
Professional specialty	11.8	17.1	9.8	15.3	12.4
Social recreation and religious workers	2.9	2.0	2.4	1.7	3.3
Technical sales and administrative support	24.5	14.5	23.5	18.5	25.8
Service	14.6	17.6	15.1	17.4	14.0
Farming, forestry, and fishing	1.6	2.7	2.2	2.1	1.3
Precision production, craft, and repair	7.9	8.0	9.4	5.8	7.3
Operators, fabricators, and laborers	11.3	12.4	14.5	13.3	9.5
Military	0.1	0.1	0.1	0.00	0.1
Experienced unemployed, not classified by occupation	1.1	0.86	0.86	1.86	1.15
Has not worked in 5+ years	14.1	16.6	14.3	14.7	13.9
Total	100.0	100.0	100.0	100.0	100.0

Source: American Community Survey, 2010 1-year estimates.

Note: All numbers are percentages; all numbers rounded to the nearest tenth.

Table A6. Distribution of Occupations of Pennsylvania Workforce by Nativity and Rural/Urban Residence, 2000
Percentages

	PA	Rural		Urban	
	Total	Foreign Born	Native-born	Foreign-born	Native-born
Managerial and professional specialty	9.3	7.9	7.0	8.5	10.4
Professional specialty	10.8	19.0	8.8	15.2	11.3
Social recreation and religious workers	2.7	2.7	2.0	2.2	3.1
Technical sales and administrative support	27.5	19.6	24.5	22.4	29.3
Service	13.2	13.9	13.7	13.6	12.9
Farming, forestry, and fishing	1.5	2.1	2.2	1.7	1.2
Precision production, craft, and repair	9.2	7.5	10.7	7.1	8.6
Operators, fabricators, and laborers	13.1	9.4	17.2	12.6	11.3
Military	0.1	0.03	0.1	0.1	0.1
Experienced unemployed, not classified by occupation	0.5	0.4	0.4	0.7	0.5
Has not worked in 5+ years	12.21	17.5	13.4	16.1	11.4
Total	100.0	100.0	100.0	100.0	100.0

Source: Decennial Census, 2000.

Note: All numbers are percentages; all numbers rounded to the nearest tenth.

Table A7. Distribution of Occupations of Pennsylvania Workforce by Nativity and Rural/Urban Residence, 2010
Percentages

	Rural		Urban	
	Foreign-born	Native-born	Foreign-born	Native-born
Managerial and professional specialty	0.7	24.9	5.5	68.9
Professional specialty	1.3	26.1	8.0	64.6
Social recreation and Religious workers	0.6	25.5	3.6	70.3
Technical sales and administrative support	0.5	30.1	4.6	64.7
Service	1.1	32.5	7.3	59.2
Farming, forestry, and fishing	1.5	42.3	8.1	48.2
Precision production, craft, And repair	0.9	37.3	4.5	57.3
Operators, fabricators, and laborers	1.0	40.1	7.4	51.5
Military	1.0	39.0	0.0	60.0
Experienced unemployed, not classified by occupation	0.7	24.5	10.4	64.4
Has not worked in 5+ years	1.1	31.8	6.4	60.7
Total	0.9	31.4	6.2	61.6

Source: American Community Survey, 2010 1-year estimates.

Note: All numbers are percentages; all numbers rounded to the nearest tenth.

Table A8. Distribution of Occupations of Pennsylvania Workforce by Nativity and Rural/Urban Residence, 2000
Percentages

	Rural		Urban		Total
	Foreign-born	Native-born	Foreign-born	Native-born	
Managerial and professional specialty	0.5	22.2	4.0	73.3	100.00
Professional specialty	1.0	24.1	6.2	68.7	100.00
Social recreation and Religious workers	0.6	21.6	3.6	74.3	100.00
Technical sales and administrative support	0.4	26.2	3.6	69.8	100.00
Service	0.6	30.5	4.6	64.3	100.00
Farming, forestry, and fishing	0.8	43.8	4.9	50.5	100.00
Precision production, craft, And repair	0.5	34.3	3.4	61.7	100.00
Operators, fabricators, and laborers	0.4	38.6	4.2	56.8	100.00
Military	0.1	33.1	2.4	64.4	100.00
Experienced unemployed, not classified by occupation	0.6	23.9	6.5	69.0	100.00
Has not worked in 5+ years	0.8	32.4	5.8	61.0	100.00
Total	0.6	29.4	4.4	65.6	100.00

Source: Decennial Census, 2000.

Note: All numbers are percentages; all numbers rounded to the nearest tenth.

Table A9. Profile of Personal Incomes, 2010

Average Values (\$) and (Standard Deviations)

	PA	Rural		Urban	
	Total	Foreign-born	Native Born	Foreign Born	Native Born
Total	38,586 (45,681)	38,748 (54,882)	32,649 (34,267)	45,338 (60,606)	42,924 (51,424)
Wage and Salary	39,548 (44,137)	39,926 (50,854)	32,982 (32,123)	47,018 (59,194)	33,110 (49,738)
Social Security	10,930 (6,555)	9,310 (6,675)	10,809 (6,448)	9,412 (6,765)	11,152 (6,652)
Welfare	2,771 (3,954)	1,828 (2,413)	2,412 (3,551)	4,022 (4,240)	2,933 (4,168)
Interest, Dividend, and Rental	6,331 (21,581)	3,812 (6,966)	5,643 (19,880)	7,787 (22,786)	6,740 (22,686)
Retirement	19,318 (19,664)	25,868 (26,312)	18,339 (18,104)	15,434 (19,197)	20,391 (21,071)
Supplementary security income	8,108 (4,154)	5,890 (3,268)	8,091 (4,330)	8,287 (4,237)	8,133 (3,993)
Other, Not Specified	9,302 (9,807)	8,367 (9,905)	8,633 (9,006)	10,535 (9,454)	9,891 (10,506)

Source: American Community Survey, 2016.

Note: Numbers represent the mean value (in dollars); numbers in parentheses are standard deviations. All numbers were rounded to the nearest dollar.

*All mean values presented in this table only account for those who reported income greater than \$0.

Table A10. Profile of Personal Incomes, 2000

Average Values (\$) and (Standard Deviations)

	PA	Rural		Urban	
	Total	Foreign-born	Native Born	Foreign Born	Native Born
Total	30,234 (27,065)	34,731 (56,750)	25,615 (28,861)	35,442 (47,340)	33,807 (41,571)
Wage and Salary	29,805 (33,335)	32,746 (47,913)	25,241 (25,425)	35,227 (44,044)	33,208 (37,373)
Social Security	7,219 (4,661)	6,721 (5,114)	7,213 (4,556)	6,308 (4,830)	7,268 (4,758)
Welfare	2,545 (3,025)	3,558 (5,078)	2,263 (2,899)	2,874 (2,910)	2,700 (3,081)
Interest, Dividend, and Rental	4,694 (16,152)	9,288 (26,625)	3,652 (13,170)	6,518 (18,645)	5,318 (17,675)
Retirement	14,739 (22,268)	16,183 (31,551)	1,062 (21,403)	14,245 (23,558)	15,447 (22,963)
Supplementary security income	5,934 (2,995)	5,553 (3,253)	5,779 (3,019)	5,721 (2,542)	6,094 (2,982)
Other, Not Specified	5,848 (8,889)	6,886 (8,152)	5,345 (8,094)	7,645 (11,358)	6,297 (9,532)

Source: American Community Survey, 2016.

Note: Numbers represent the mean value (in dollars); numbers in parentheses are standard deviations. All numbers were rounded to the nearest dollar.

*All mean values presented in this table only account for those who reported income greater than \$0.

Table A11. Profile of Personal Incomes, Pennsylvania, 2013-2017

Means (\$) (Standard Deviations)

	PA	Non-Metropolitan		Metropolitan	
	Total	Foreign-born	Native Born	Foreign Born	Native Born
Wage and Salary Income	33,827 (52,616)	34,784 (44,137)	24,345 (29,821)	35,132 (59,407)	35,326 (54,808)
Non-Farm Business Income	1,120 (10,137)	183 (2,088)	1,449 (8,852)	1,456 (10,801)	1,036 (10,295)
Farm Business Income	53 (1,506)	0 (0)	188 (2,851)	18 (402)	34 (1,212)
Child Support	102 (955)	49 (589)	117 (843)	38 (511)	106 (1,005)
Alimony	10 (564)	147 (1,099)	1 (60)	0 (0)	13 (640)
Assistance	77 (1,512)	0 (0)	14 (352)	263 (3,361)	71 (1,342)
Social Security	830 (3,589)	849 (3,036)	1,036 (3,966)	435 (2,524)	833 (3,607)
Welfare	25 (375)	17 (174)	11 (177)	19 (303)	29 (406)
SSI	256 (1,645)	94 (687)	206 (1,336)	55 (809)	285 (1,751)
Unemployment Benefits	244 (1,677)	410 (1,615)	323 (1,919)	62 (789)	247 (1,694)
Worker's Compensation	58 (1,147)	0 (0)	59 (875)	66 (1,193)	57 (1,185)
Veteran's Benefits	68 (1,397)	0 (0)	84 (2,151)	11 (181)	71 (1,298)
Survivor's Benefits	94 (2,230)	160 (1,338)	25 (423)	21 (531)	113 (2,501)
Disability	133 (1,813)	0 (0)	123 (1,930)	85 (1,236)	140 (1,842)
Retirement	854 (6,646)	251 (1,289)	1,068 (6,863)	253 (3,147)	877 (6,862)
Interest	877 (5,258)	642 (5,045)	763 (4,649)	808 (5,651)	905 (5,317)
Dividends	448 (3,996)	418 (1,774)	305 (3,414)	290 (3,263)	488 (4,155)
Rent	295 (3,323)	39 (276)	168 (1,550)	237 (3,287)	323 (3,549)
Educational Assistance	360 (2,474)	81 (631)	164 (1,188)	362 (2,301)	294 (2,651)
Other, Not Specified	22 (642)	0 (0)	11 (275)	8 (295)	26 (709)

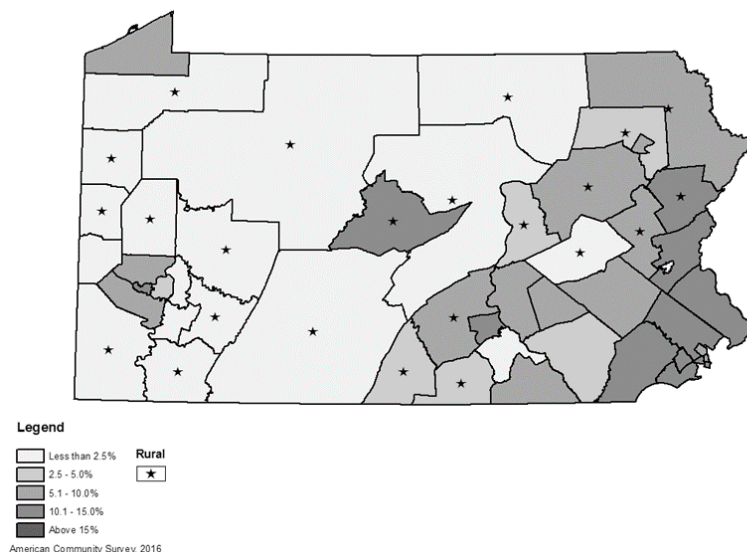
Source: Current Population Survey, Annual Social and Economic Supplement 2013-2017.

Note: Numbers represent the mean value (in dollars); numbers in parentheses are standard deviations. All numbers were rounded to the nearest dollar.

Fact Sheet 1: The Foreign-Born Workforce in Rural Pennsylvania

Key findings

- 3.5 percent of rural Pennsylvania's workforce was foreign-born in 2016. In urban Pennsylvania, 10.7 percent of the workforce was foreign-born.
- The geographic distribution of the foreign-born workforce was uneven across Pennsylvania in 2016, as illustrated in the map.
- The largest concentration of foreign-born individuals of working age is in the eastern region of Pennsylvania, with the highest percentages (10+ percent) of foreign-born individuals in the workforce being in the eastern urban PUMAs. In Pennsylvania's rural PUMAs, the largest concentrations of foreign-born individuals are in Monroe County (9.3%), Centre County (8.1%), Carbon and northern Lehigh counties (6.2%), Pike, Wayne, and Susquehanna counties (5.2%), and Columbia and Luzerne counties (5.0%).
- The representation of the foreign-born among rural Pennsylvania's workforce has increased from 2.8 percent in 2010, and from 2.0 percent in 2000. This increase is large on a proportional basis but is smaller than the absolute increase in the foreign-born share of the urban workforce from 6.3 percent in 2000.



Data and methods

This study analyzed individual-level data from the 2016 American Community Survey (ACS) 1-year sample for the main analysis and also studied trends over time by analyzing the 2010 ACS 1-year sample and the 2000 Decennial Census. The foreign-born population includes all individuals born in a foreign-country, excluding individuals born abroad to U.S.-citizen parents (e.g., on military bases). The workforce includes all individuals aged 16-64 years who are working or potentially available to work (i.e., both in and out of the labor force). The rural population is defined as individuals living in Public-Use Microdata Areas (PUMAs) with a population density below the Pennsylvania-wide average.

Fact Sheet 2: The Socioeconomic Characteristics of Rural Pennsylvania's Foreign-Born Workforce

Key findings

- Educational attainment among the rural foreign-born workforce is bifurcated. Relative to the native-born population in rural areas, the foreign-born workforce has disproportionate shares of individuals with both (a) less than a high school degree and (b) a bachelor's degree or higher.

- The rural foreign-born population is much more racially and ethnically diverse than the native-born population, more than 90 percent of whom identify as non-Hispanic white.

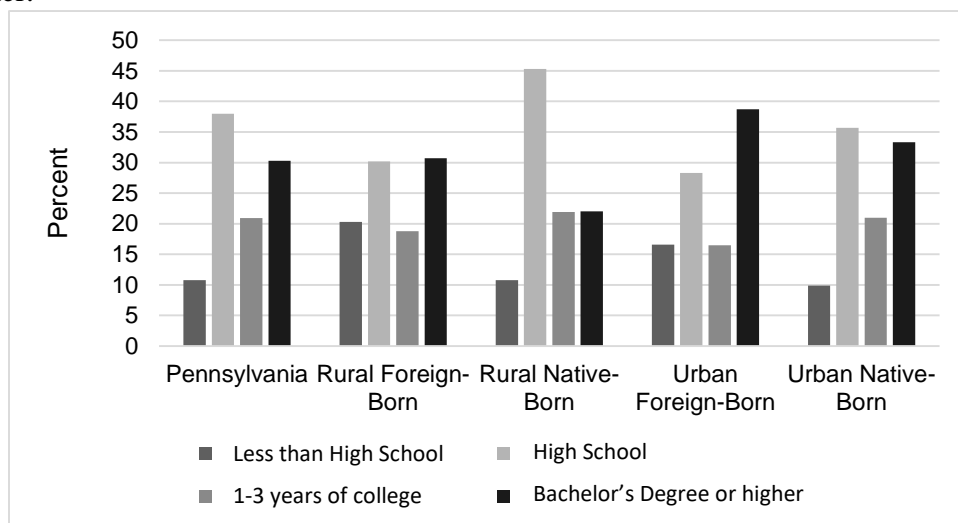


Figure 1

Source: American Community Survey, 2016

Among the rural foreign-born population, 36.1 percent identified as Hispanic, 26.9 percent as Asian/Pacific Islander, and 8.1 percent as non-Hispanic black.

- Almost eight in 10 (79.1%) of the foreign-born rural workforce has resided in the United States for 6 or more years, and a majority (53.2%) of individuals in this population have attained U.S. citizenship.
- More than one-fifth (21.2%) of foreign-born individuals in the rural workforce reported speaking only English, 62.4 percent speak English either well or very well, and less than 4 percent (3.8%) spoke no English.

Data and methods

The study analyzed individual-level data from the 2016 American Community Survey (ACS) 1-year sample. The sample was limited to members of the workforce, defined as individuals aged 16-64 years. Individuals were classified as rural residents if they lived in a PUMA with a population density below the Pennsylvania-wide average.

Fact Sheet 3: Earnings and Income among Rural Pennsylvania's Foreign-Born Workforce

Key findings

- On average, foreign-born members of the workforce in rural Pennsylvania earned \$34,784 per year in wage and salary income across the 2012-2016 period, which was more than \$10,000 greater than the average among native-born members of the rural workforce (\$24,348). However, the poverty rate among the rural foreign-born workforce was 21.1 percent, nearly 9 percentage points higher than the 12.6 percent rate among the native-born rural workforce. These results suggest the rural foreign-born workforce is characterized by high levels of inequality.

- Both native- and foreign-born members of the rural workforce earn less, on average, in wage and salary income than their urban counterparts. However, the foreign-born advantage in wage and salary income is unique to rural Pennsylvania. In urban areas, native-born workers (\$35,326) have a slightly higher average wage and salary income than foreign-born workers (\$35,132).

	PA Total	Non-Metropolitan Foreign-born	Native-born	Metropolitan Foreign-born	Native-born
Wage and salary income	33,827	34,784	24,345	35,132	35,326
Non-farm business income	29,597	24,000	27,818	31,280	29,597
Farm business income	9,645	--	22,144	4,104	6,624
Child support	4,920	7,200	3,794	6,004	5,176
Alimony	11,169	8,372	1,638	--	13,040
Assistance	8,455	--	3,130	20,557	7,343
Social security	12,162	10,449	11,948	11,582	12,248
Welfare	2,595	1,800	1,349	2,969	2,742
SSI	8,123	5,075	7,225	8,777	8,246
Unemployment benefits	6,077	4,032	6,032	5,334	6,129
Worker's compensation	10,554	--	7,429	10,742	11,380
Veteran's benefits	11,725	--	18,581	2,692	11,424
Survivor's benefits	13,547	11,368	4,330	6,692	15,043
Disability	11,334	--	11,772	10,117	11,350
Retirement	25,264	6,113	22,430	18,379	26,332
Interest	1,784	2,204	1,680	2,119	1,775
Dividends	3,567	4,436	3,144	3,600	3,615
Rent	7,704	1,006	4,375	6,400	8,426
Educational assistance	7,777	5,000	4,441	8,214	8,187
Other, not specified	2,989	--	1,433	2,584	3,274

Source: Current Population Survey, Annual Social and Economic Supplement 2013-2017. Note: Numbers represent mean values. Assistance is regular assistance from family members or relatives. All numbers were rounded to the nearest dollar. All mean values only account for those who reported income greater than \$0.

- Among the rural workforce in Pennsylvania, native-born adults are much more likely to own businesses and receive business income than foreign-born adults. On average, native-born rural adults earned \$27,818 and \$22,144 in non-farm and farm business income per year, respectively, and foreign-born adults earned \$24,000 and \$0, respectively.
- On average, rural foreign-born adults received slightly more income from welfare (\$1,800) than native-born adults (\$1,349); but native-born rural adults received more income from social security (\$11,948), SSI (\$7,225), unemployment benefits (\$6,032) and disability benefits (\$11,772) than rural foreign-born adults (\$10,449, \$5,075, \$4,032, and \$0, respectively).

Data

For the analysis of income by source, individual-level data from the 2013-2017 Annual Social and Economic Supplement of the Current Population Survey were analyzed. This survey collects data on income during the prior year, which corresponds to the 2012-2016 period. The sample was limited to individuals aged 16-64 years. Individuals were classified as rural residents if they lived in a non-metropolitan county, as defined by the U.S. Office for Management and Budget. For the analysis of poverty, individual-level data from the 2016 American Community Survey (ACS) 1-year sample were analyzed. The sample was limited to members of the workforce, defined as individuals aged 16-64 years. The research classified individuals as rural residents if they lived in a PUMA with a population density below the Pennsylvania-wide average.

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